V.16

JAN. 1942

COTTON

SERVING THE

Textile Industries

A Way to Get the Most Value from
a Dollar's Worth of Starch

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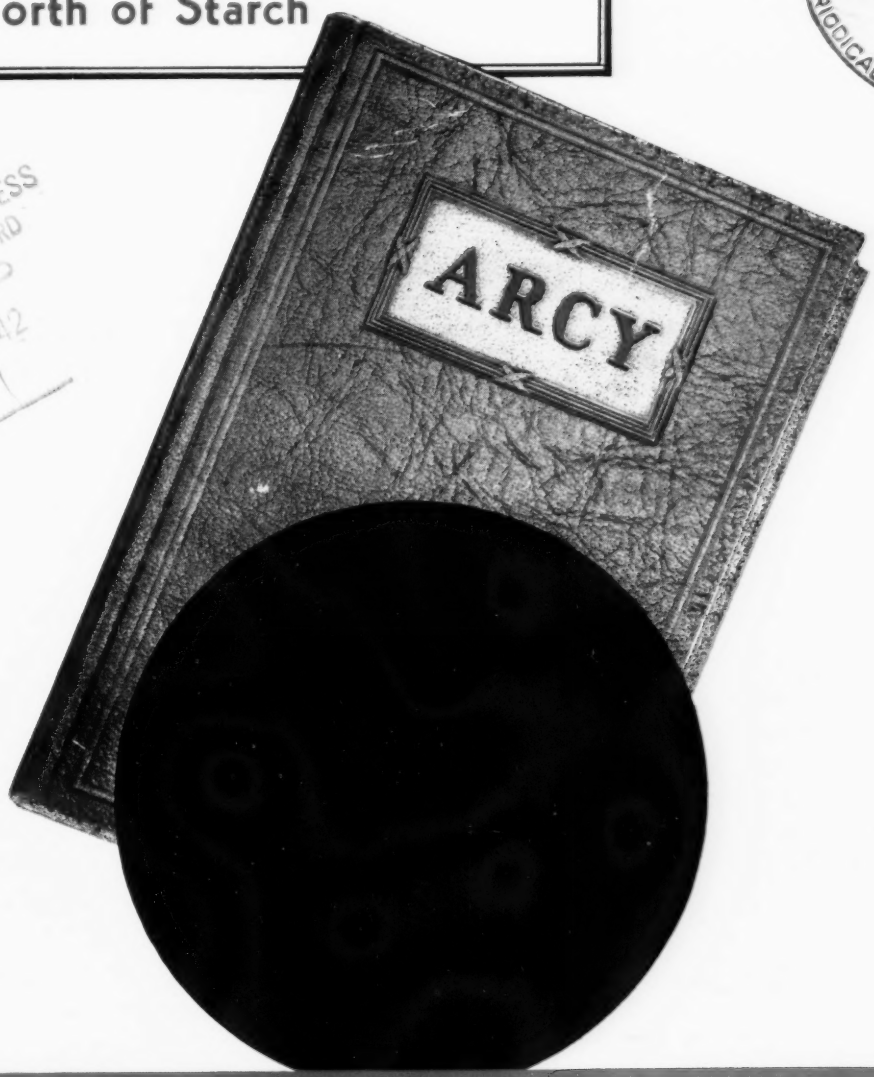

Write for Your Copy of this Story—Today!

RAKE CORPORATION NORFOLK, VIRGINIA

Here's a "pointer" on READY CASH

Want a "pointer" on the right way to obtain ready cash in your business? Here it is . . .

You get cash on shipment. Yet your customers receive their regular terms. Commercial Factors, by paying you as you ship, eliminates tying-up a good portion of your capital in receivables for 30, 60 or 90 days . . . assures you a steady source of ready cash.

Commercial Factors assumes the credit risks and eliminates collection expenses and bookkeeping details as well.

Remember these features when you think of factoring, especially when considering your plans for 1942.

COMMERCIAL FACTORS CORPORATION

Fred'k Victor & Achelis, Inc. Established 1828

Schefer, Schramm & Vogel Established 1838

Peierls, Buhler & Co., Inc. Established 1893

TWO PARK AVENUE, NEW YORK

COTTON is published monthly by W. R. C. Smith Publishing Company, Dalton and Atlanta, Ga., U. S. A.
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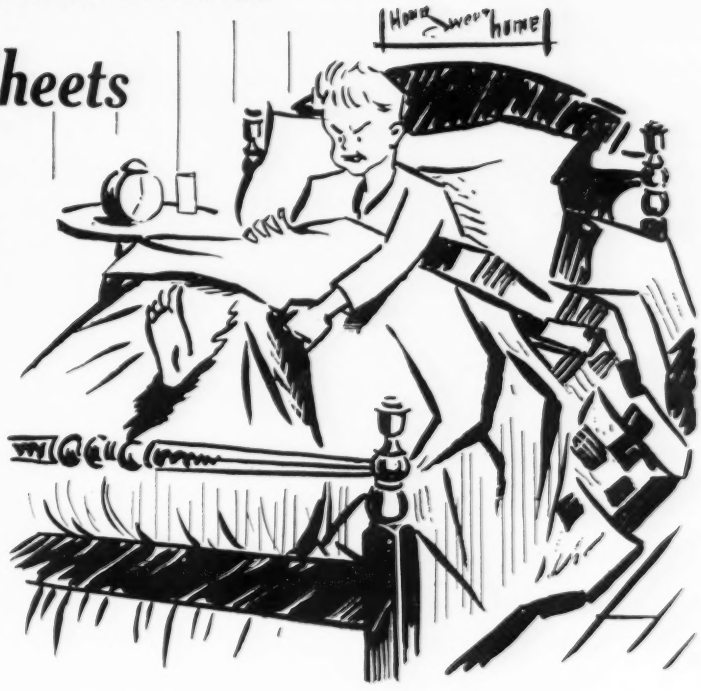
Do You Remember Those Old Time Sheets with the Seam Down the Middle



If you are 35 years old, you probably can remember your boyhood experience with two-strip sheets with seams down the middle how the seams opened up after a time and your toes caught in the slots, to your own discomfort and the dismay of your mother when the process of disengaging your trapped toes resulted in torn sheets.

Those sheets were made at home, from 40" sheeting — a considerable product of our textile mills of those days.

Broad looms for weaving full-width sheets were built in the days of the common loom; but they were not numerous, nor were they efficient. Naturally their product was expensive and not generally used.

General adoption of full-width sheets as we know them today came with the appearance of the Draper L Model broad sheeting loom, which because of its ease of operation and greatly increased product per unit of labor put the price of broad sheets within the reach of the average housewife's purse.

The first Draper broad sheeting loom, our F Model, was brought out in May, 1899. It was not the success we had looked for, being little better, except for its automatic features, than the common looms then on the market.

After six long years of further experiment, we sold our first order of L Model looms in February 1905. Since then full-width sheets have come into common use in this country, and they have been almost universally made on L Model looms.

In 1934 we brought out a high speed L Model known as the XL. It brings further reduction in the cost of weaving full-width sheets.

DRAPER CORPORATION

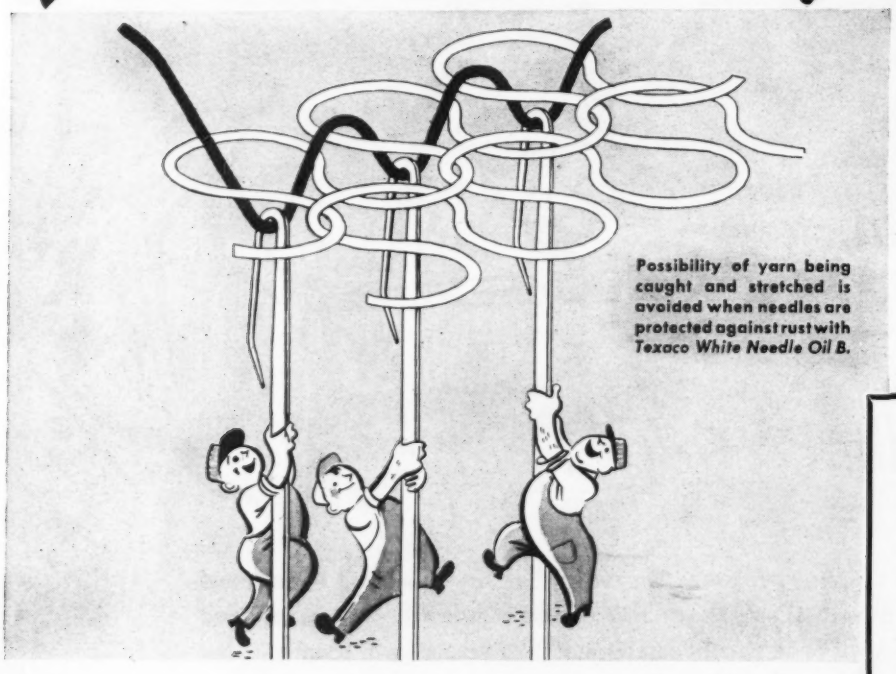
Hopedale Massachusetts

Atlanta Georgia

Spartanburg S C

Identical loops...

COURSE AFTER COURSE



Possibility of yarn being caught and stretched is avoided when needles are protected against rust with *Texaco White Needle Oil B.*

RUST-FREE NEEDLES forming uniform loops, less scouring, cleaner, sweeter-smelling grey goods . . . all are yours when you use *Texaco White Needle Oil B.*

Texaco White Needle Oil B prevents rusting of needles in the presence of moist air and wetted yarn. It resists oxidation, gum formation, rancidity. It assures smoother machine operation and prevents stock spoilage. Scouring of grey goods is easier, faster.

The outstanding performance that has made Texaco preferred in the fields listed in the panel has made it preferred by textile mills everywhere.

These Texaco users enjoy many benefits that can also be yours. A Texaco Lubrication Engineer will gladly cooperate . . . just phone the nearest of more than 2300 Texaco distribution points in the 48 States, or write:

The Texas Company, 135 East 42nd Street, New York, N. Y.

***STOPS RUST** . . . Texaco Cepheus Oil C keeps oscillating and rotary knitting machine bearings free from reddish rust deposits . . . prevents stock spoilage . . . eliminates drag and sluggish motion.*

THEY PREFER TEXACO

★ More locomotives and cars in the U. S. are lubricated with Texaco than with any other brand.

★ More revenue airline miles in the U. S. are flown with Texaco than with any other brand.

★ More buses, more bus lines and more bus-miles are lubricated with Texaco than with any other brand.

★ More stationary Diesel horsepower in the U. S. is lubricated with Texaco than with any other brand.

★ More Diesel horsepower on streamlined trains in the U. S. is lubricated with Texaco than with all other brands combined.

FOR YOUR ENJOYMENT
TWO GREAT RADIO PROGRAMS

FRED ALLEN every Wednesday night. See your local newspaper for time and station.

METROPOLITAN OPERA. Complete broadcasts of great operas every Saturday. See your local newspaper for time and station.

TEXACO

TEXACO Lubricants

FOR THE TEXTILE INDUSTRY

RETURN METAL DRUMS PROMPTLY . . . thus helping to make present supply meet industry's needs and releasing metal for National Defense.

The bug in the idea is BUGS

Joseph sold the idea of an ever-normal granary to Pharaoh 5000 years ago. It's still a good idea... except for insect infestation of the stored grain!

To safeguard the millions of bushels of corn and wheat now in storage against insect attack requires thousands of gallons of fumigants! One of the effective fumigants contains a mixture of carbon bisulphide and carbon tetrachloride . . . of which Westvaco is an important producer. Both are being made available under Department of Agriculture direction for safeguarding America's food supply.

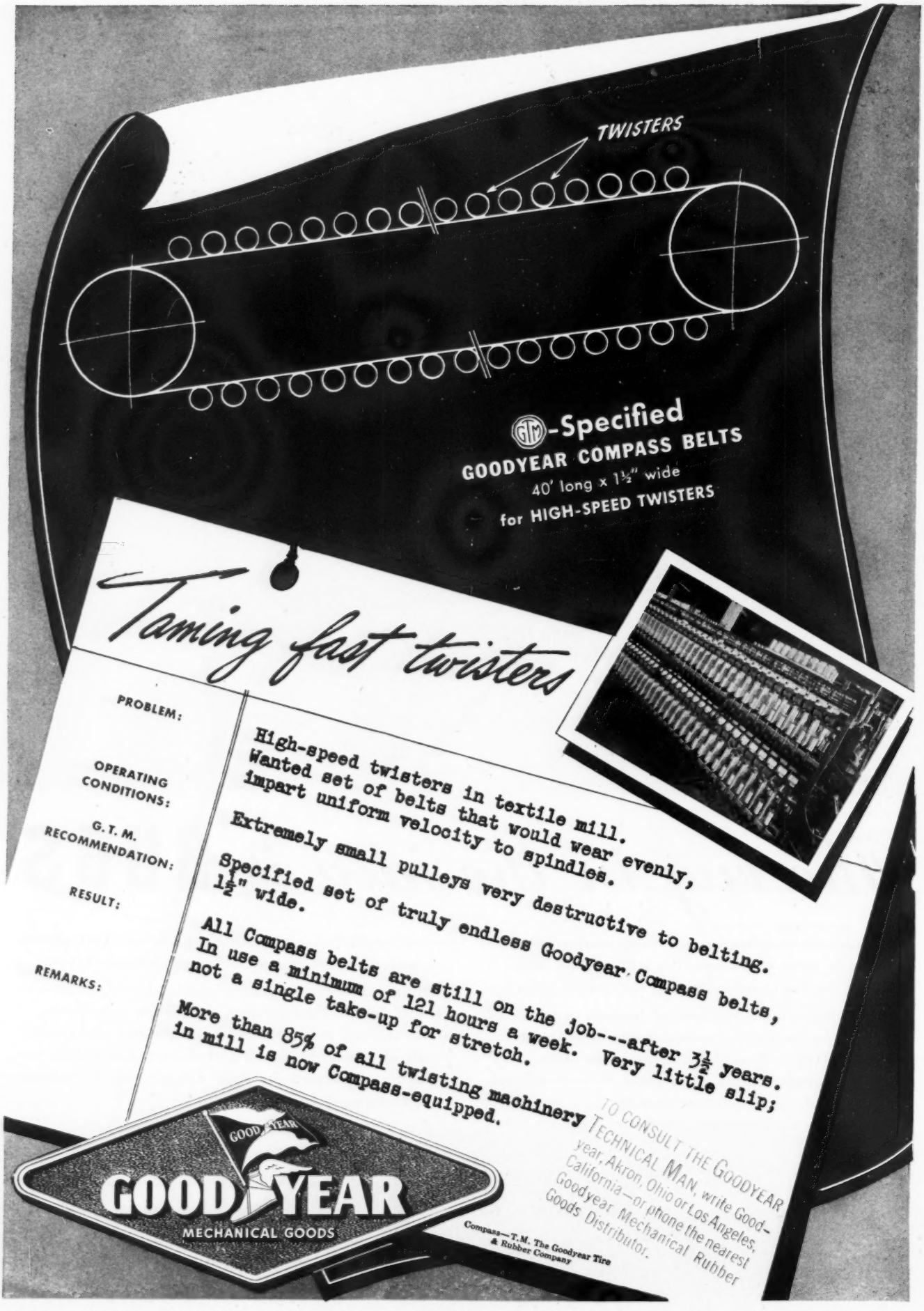
Fumigants for foodstuffs—barium compounds for tracer bullets—magnesium oxides for refractories—chlorine and its derivatives—alkalis and phosphates—all of the increasing list of Warner Chemicals are playing their part in both defense and industrial production.

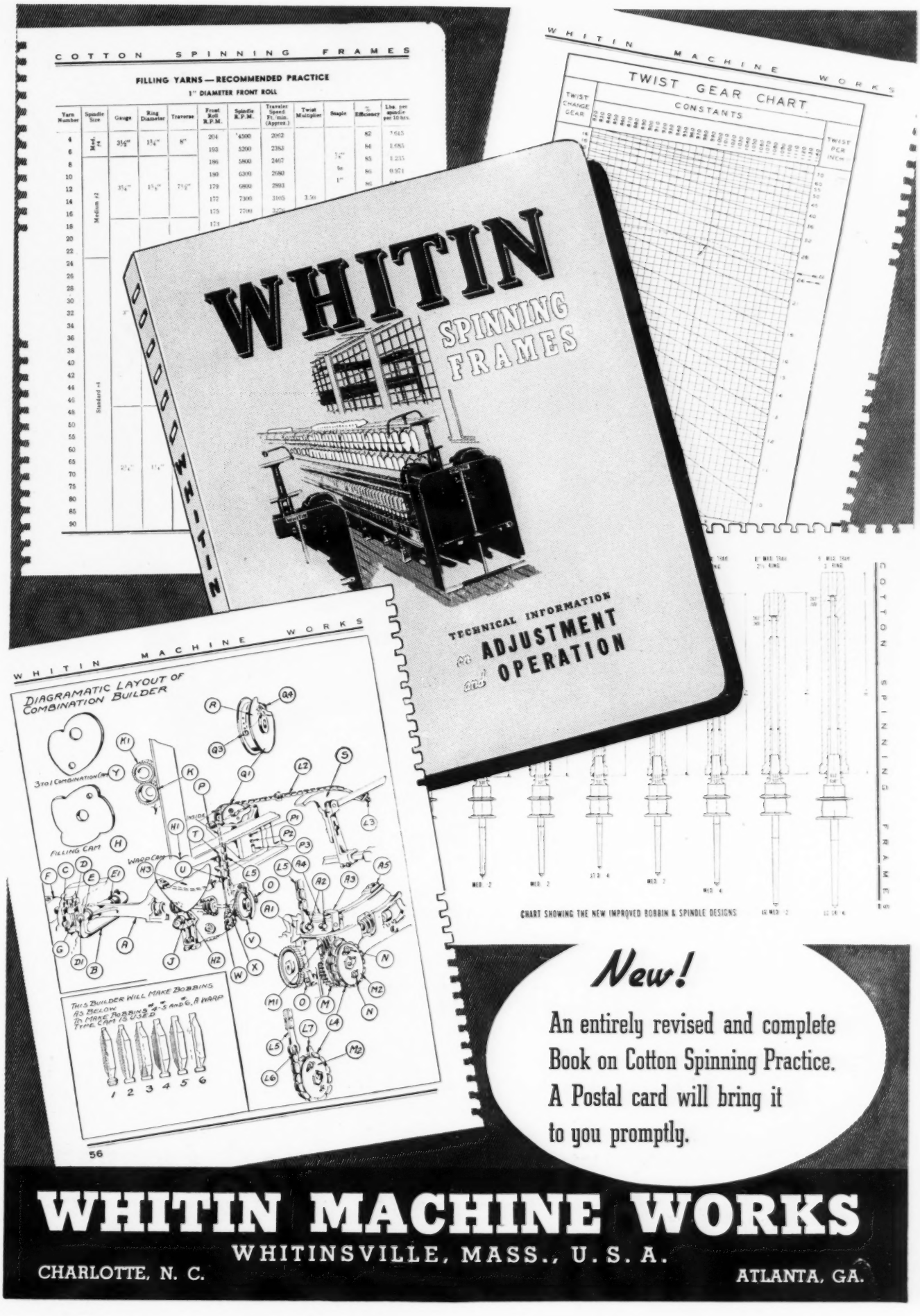
WARNER CHEMICAL COMPANY

Division of WESTVACO CHLORINE PRODUCTS CORPORATION

CHRYSLER BUILDING, NEW YORK, N. Y.

WOODSIDE BUILDING, GREENVILLE, S. C.


TWISTERS
GM-Specified
GOODYEAR COMPASS BELTS
40' long x 1½" wide
for HIGH-SPEED TWISTERS
Taming fast twisters
PROBLEM:
High-speed twisters in textile mill. Wanted set of belts that would wear evenly, impart uniform velocity to spindles.
OPERATING CONDITIONS:
Extremely small pulleys very destructive to belting.
G. T. M. RECOMMENDATION:
Specified set of truly endless Goodyear Compass belts, 1½" wide.
RESULT:
All Compass belts are still on the job---after 3½ years. In use a minimum of 121 hours a week. Very little slip; not a single take-up for stretch.
REMARKS:
More than 85% of all twisting machinery in mill is now Compass-equipped.
TO CONSULT THE GOODYEAR TECHNICAL MAN, write Goodyear, Akron, Ohio or Los Angeles, California—or phone the nearest Goodyear Mechanical Rubber Goods Distributor.
GOODYEAR
MECHANICAL GOODS
Compass—T.M. The Goodyear Tire & Rubber Company


COTTON SPINNING FRAMES
FILLING YARNS—RECOMMENDED PRACTICE
1" DIAMETER FRONT ROLL
WHITIN MACHINE WORKS
TWIST GEAR CHART
CONSTANTS
WHITIN
SPINNING FRAMES
TECHNICAL INFORMATION
ADJUSTMENT
AND
OPERATION
WHITIN MACHINE WORKS
DIAGRAMATIC LAYOUT OF COMBINATION BUILDER
THIS BUILDER WILL MAKE BOBBINS
CHART SHOWING THE NEW IMPROVED BOBBIN & SPINDLE DESIGNS
COTTON SPINNING FRAMES
56
New!
An entirely revised and complete Book on Cotton Spinning Practice. A Postal card will bring it to you promptly.
WHITIN MACHINE WORKS
WHITINSVILLE, MASS., U. S. A.
CHARLOTTE, N. C.
ATLANTA, GA.

a WARWICK product

The only Laboratory Certified Showerproofing Process! Nationally Advertised ...to Millions of Men, Women and Children!

WARWICK Chemical Company

WEST WARWICK, R. I.; ROCK HILL, S. C.
IMPREGNOLE CORP., 580 FIFTH AVE., N. Y. C.

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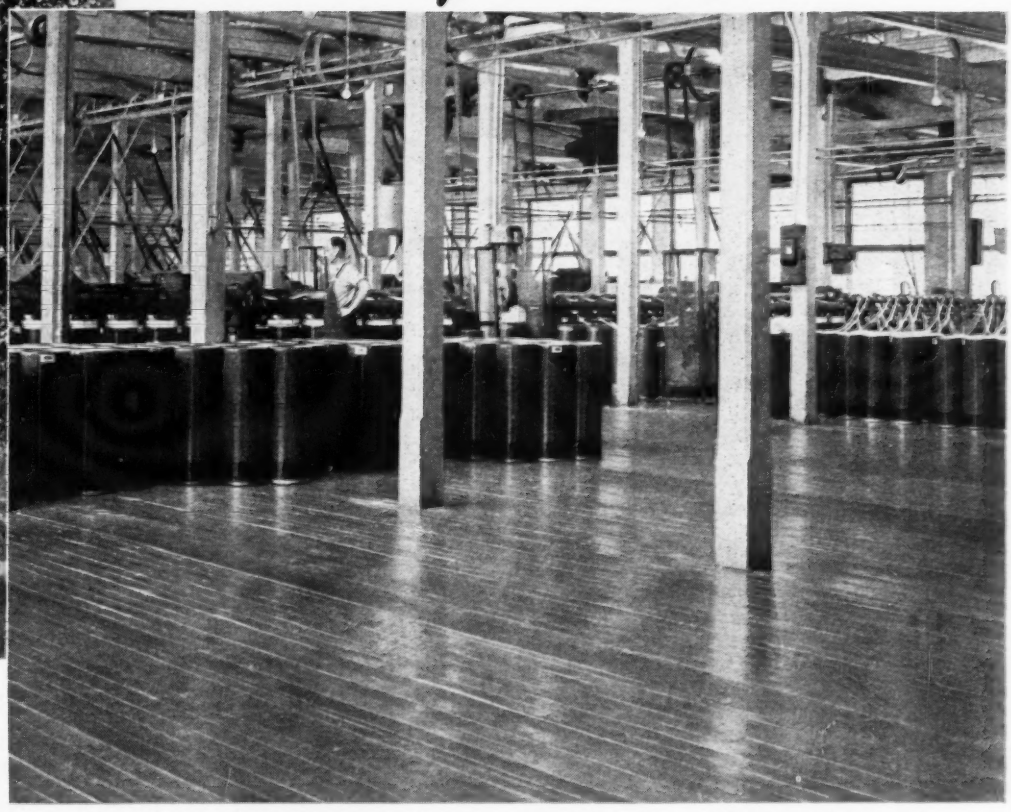
"BUILT FOR PUNISHMENT" *by Nature*



Heavy-duty finished Hard Maple floor in the Central Mill Plant of Avondale Mills, at Sylacauga, Ala. Photograph by courtesy of E. I. du Pont de Nemours & Company

Like a healthy employee, a Maple floor stays unruffled under daily production pressure.

Nature gave Hard Maple tight texture, close grain, and tough fibre — so much stamina, that routine floor-punishment means little to Maple.

In mills, therefore, Northern Hard Maple wears slowest, costs less per year of service — is easiest, least expensive to maintain. Properly finished, mere brushing cleans it. So smooth, it doesn't catch lint, and makes movement easy for employees and equipment, while its warm, dry, resilient comfort encourages workers to give their best.

All these factors are important to mills. That's why most textile mills floor with Maple — **MFMA** Northern Hard Maple, in strips or blocks. Ask your architect before you build or remodel.

MAPLE FLOORING MANUFACTURERS ASSOCIATION
1794 McCormick Building, Chicago, Illinois

Write for folder on heavy-duty finishes for old or new Maple floors, which further reduce cleaning costs.

Floor *with* MFMA Maple

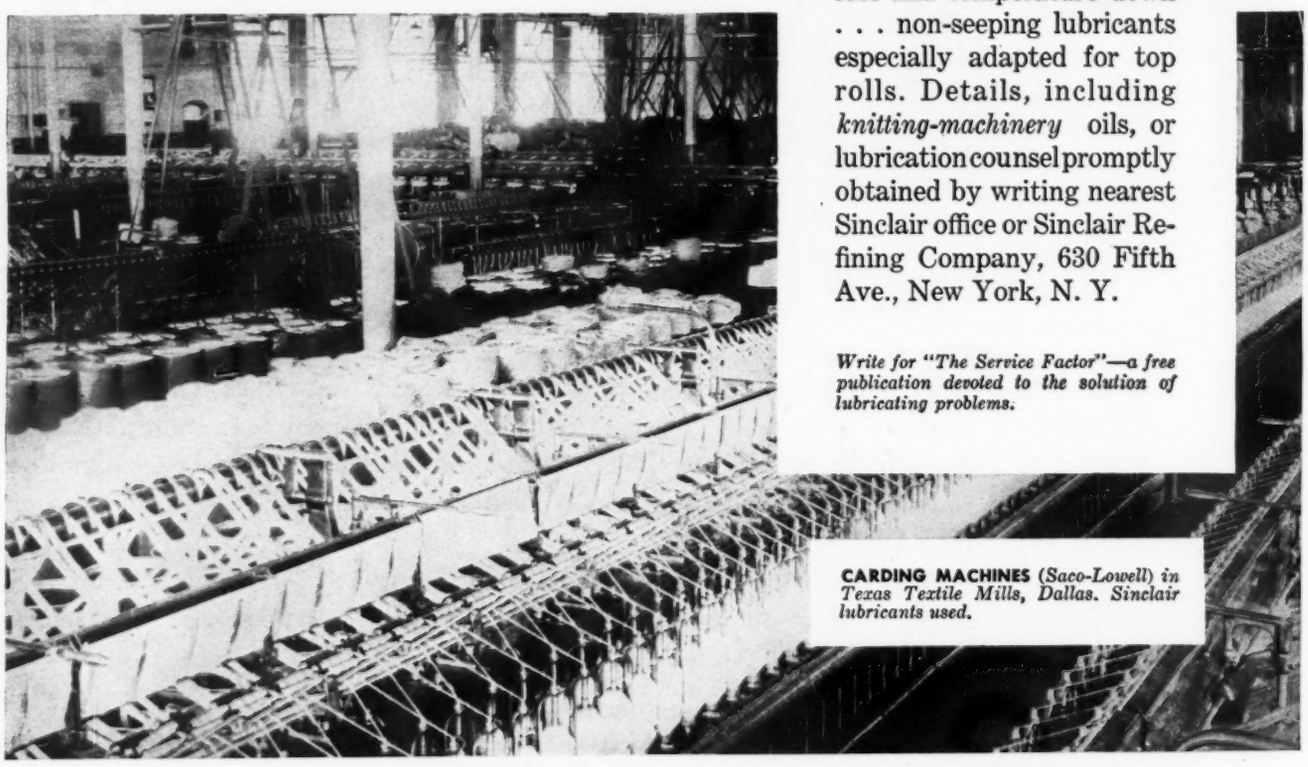
REG. U. S. PAT. OFF

(NORTHERN HARD)

DEFENSE DRIVE bans unnecessary lay-offs. Proper lubrication prevents forced shut-downs. For *TEXTILE MACHINERY* there are . . .

. . . SINCLAIR LILY WHITE OILS and NO-DRIP LUBRICANTS . . . oils that keep spindle hours up, power loss and temperature down . . . non-seeping lubricants especially adapted for top rolls. Details, including *knitting-machinery* oils, or lubrication counsel promptly obtained by writing nearest Sinclair office or Sinclair Refining Company, 630 Fifth Ave., New York, N. Y.

Write for "The Service Factor"—a free publication devoted to the solution of lubricating problems.



CARDING MACHINES (*Saco-Lowell*) *in Texas Textile Mills, Dallas. Sinclair lubricants used.*

SINCLAIR TEXTILE LUBRICANTS

SINCLAIR REFINING COMPANY (Inc.)

2540 West Cermak Road, Chicago • 10 West 51st Street, New York City • Rialto Bldg., Kansas City • 573 West Peachtree Street, Atlanta • Fair Building, Ft. Worth

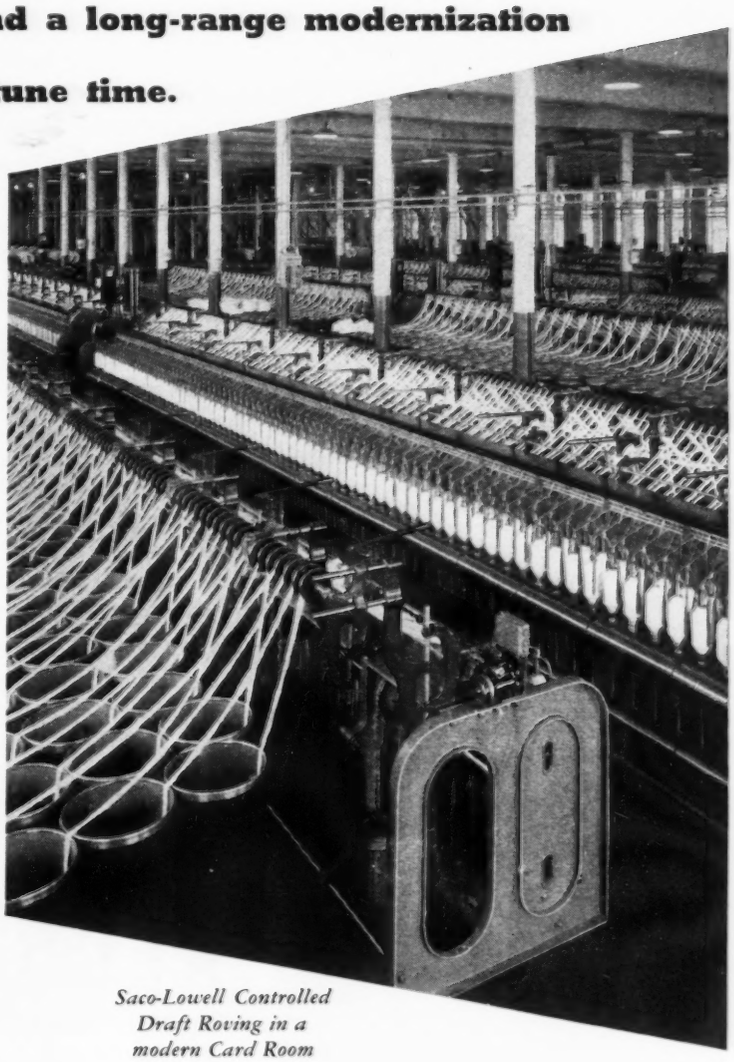
Modernization Plans need not wait

Replacement of inefficient and obsolete equipment can be anticipated now . . . and a long-range modernization program started at the opportune time.

The speed and efficiency with which the textile industry has met the unprecedented needs of National Defense is a tribute to the foresight of capable leadership. Millions of yards of quality fabrics for many defense purposes were started at almost a moment's notice . . . and produced to meet the needs of our rapidly expanding armed forces. This proud and enviable record of achievement by the Textile Industry is rooted in the effectiveness of its progressive modernization programs.

Modernization has long been a policy of the textile industry. And because of this policy new and better methods of manufacture have always been quickly recognized and adopted.

Today modernization must wait . . . but the plans for eventual modernization can be started at once. Now is the time to check all operating equipment —evaluate its performance and efficiency—and formulate plans, in cooperation with our engineering staff, for the inevitable modernization program which must come with the return of normal conditions.

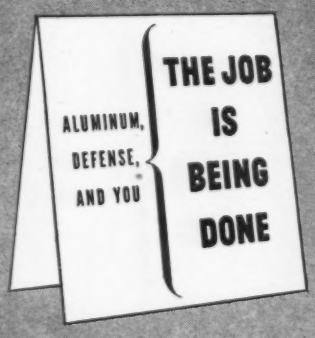


Saco-Lowell Controlled Draft Roving in a modern Card Room

SACO-LOWELL SHOPS

60 Batterymarch Street, Boston, Mass. Charlotte, N. C. Greenville, S. C. Atlanta, Ga.

ALUMINUM, THE FUTURE, AND YOU



RIGHT NOW OUR FACTORIES have only one interest: to make more Defense Aluminum than the world has ever seen before. Every resource we can muster is concentrated on that job.

WHEN AMERICA HAS WON THROUGH to make the world safe for our children to live in . . . the saying is: What a lot of aluminum is going to be available for everybody.

THE REAL POINT TO PONDER is how to get set to make that deluge of light metal work for you. In the kind of world we're going to have, sure as fate, the man who fails to call, *now,* on every resource at his command is going to be left at the post.

WE'VE COINED A WORD:

IMAGINEERING. It's the fine art of deciding where you go from here. It's the act of thinking out what you are going to face, and doing something about it now. *Imagination* plus *engineering* is a formula for the future you're going to hear more about.

A MAN CAN be producing for Defense at top speed and be imagineering at one and the same time. In fact, the more he is devoted to Defense now, the more he needs imagineering for ***THE DAY WHEN.***

OBVIOUSLY, you can imagineer with steel, copper, glass, zinc, plastics, or what have you. We hope you will, because the world is going to need better use of all materials than it ever saw before.

THE CLOSER YOU GET TO FUNDAMENTALS the more quickly you must decide that the great need is going to be for the very things Alcoa Aluminum does best: Lightness with strength, resistance to corrosion, reflectivity, workability and all the rest of its powers all wrapped up in a low-cost package full of unlimited possibilities for you, personally, in your business.

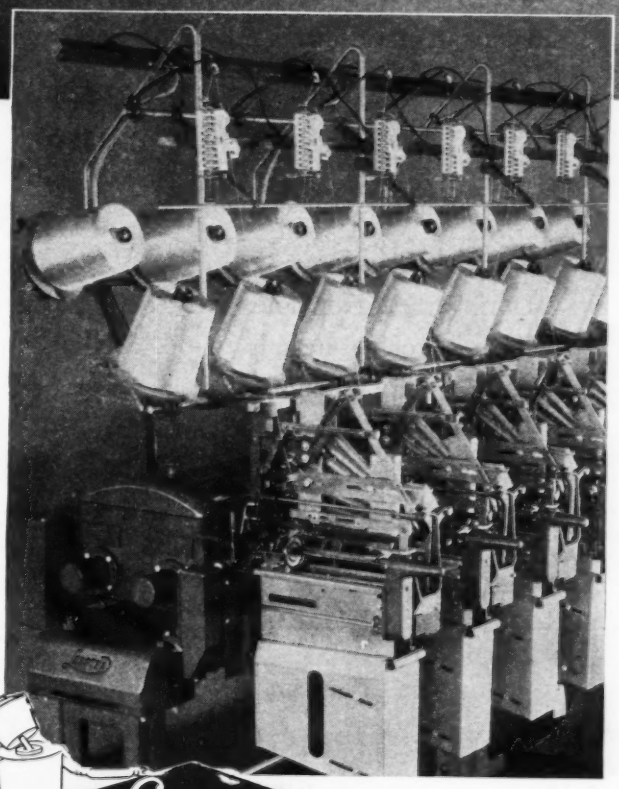
TWO HEADS ARE BETTER THAN ONE. Already, many an industry, many a company, has called us into an imagineering session. We've seen things projected that will make news when the curtain can be lifted. Usually we've been able to help with some imagineering of our own.

DOES THIS SUGGEST ACTION? WE HOPE SO.

Aluminum Company of America, Pittsburgh, Penn.

ALCOA ALUMINUM

UNIFORM BOBBINS FOR HIGH-QUALITY RAYON FABRICS



Among the many new features introduced by the Universal Automatic, the high winding speed and the automatic means of loading and doffing usually receive the first attention. However, the following features are important in preserving the original quality of the yarn and helping to insure uniform fabrics.

A. No strain when starting. When the spindle starts after bobbin transfer, the tensions are held open automatically for an instant, and there is no sudden strain on the yarn.

B. Gentle doffing. Completed bobbins are carefully passed by a tilting shelf into a container directly under the spindle. They are positioned in the box so that there is no contact between the yarn and the metal rings on other bobbins.

C. Clean hands. The work can be divided so that one operator with clean, smooth hands does all the handling of the yarn, such as creeling; while the other operator handles empty bobbins.

Note rugged construction of Universal Automatic High-Speed Bobbin Winder.

See our catalog in TEXTILE YEARBOOK.

UNIVERSAL WINDING COMPANY

PROVIDENCE Boston Philadelphia Utica Charlotte Atlanta

GET THEE BEHIND ME, SATAN!

SURE, it's a temptation, during these times when we can't even produce enough yarn to satisfy the market's requirements—it's a temptation to cut out all activities not directly connected with the production of rayon yarn and fiber and abandon fiber research, fabric development, mill technique, and sales assistance.

But no, we're not going to discontinue any of those services which you've come to associate with American Viscose Corporation. If anything, we're stepping up our service facilities, expanding our research and development work, so that we may be of even greater value to you in the future. And if you'll just pause from your worries about war, prices, shortages, and inflation, we think you'll agree this is a sound policy.

During these troublous times, our research men will be marching steadily ahead, delving into the ideas that will be tomorrow's new fabrics and new production methods. And when conditions return to normal, they'll be ready to give you just the help you need. You'll be thankful then, that we are continuing our research now!

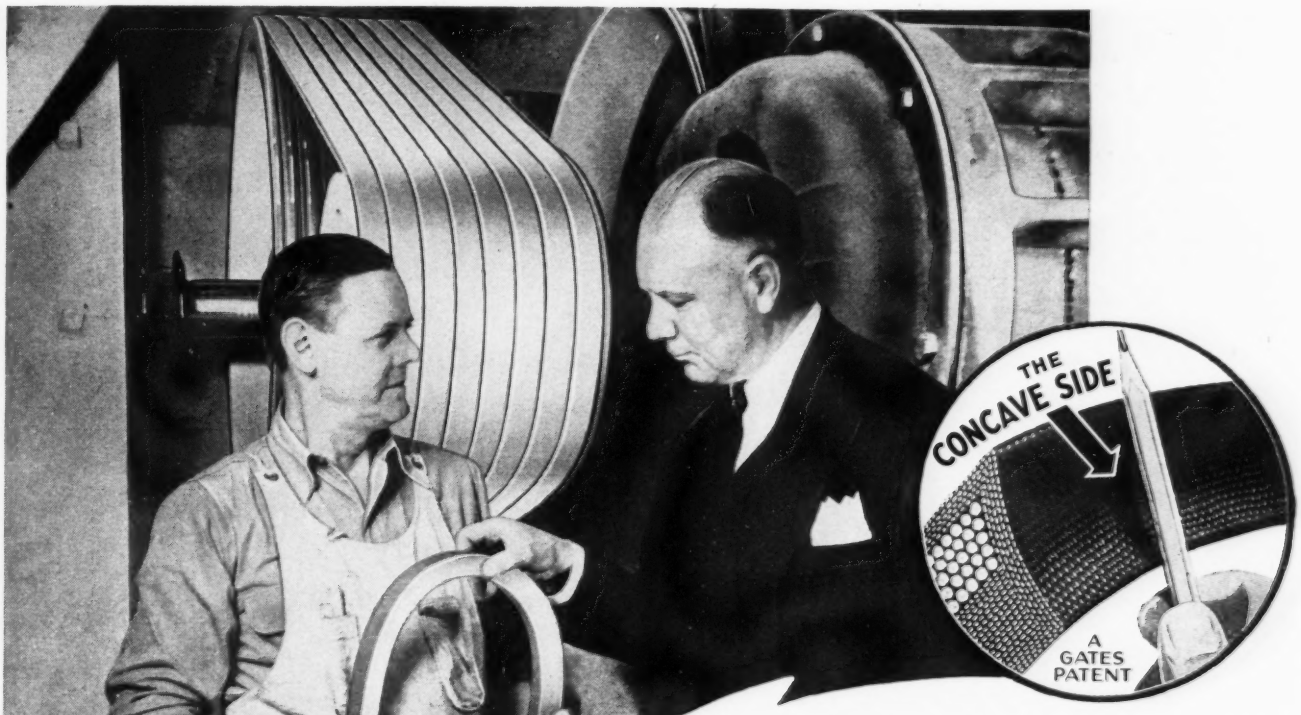
Copr. 1942—American Viscose Corp.

CROWN TESTED AND APPROVED RAYON FABRIC TRADE MARK REG. U.S. PAT. OFF.

AMERICAN VISCOSE CORPORATION

World's Largest Producer of Rayon Yarn

SALES OFFICES: New York, N. Y.; Charlotte, N. C.; Providence, R. I.; Philadelphia, Pa.
PLANTS AT: Marcus Hook, Pa.; Parkersburg, W. Va.; Roanoke, Va.; Lewistown, Pa.; Nitro, W. Va.; Meadville, Pa.; Front Royal, Va.



This Simple Test Shows Why the CONCAVE SIDE Cuts Belt Costs!

What Happens When a V-Belt Bends

FIG. 1

FIG. 2

If you care about belt costs, pick up any V-belt you have handy and make this simple test:—

Bend the V-belt while you grip its sides and you will feel how the belt changes shape. The top, under tension, narrows. The bottom widens. The sides of the belt bulge out. Clearly, if its sides were straight to begin with, the bent belt is forced into a shape that does not fit the sheave groove—as shown in figure 1, on the left.

Now, bend a V-belt built with the patented Concave side. You get the same shape change, but now the new shape exactly fits the sheave groove—as shown in figure 2. There is no side-bulge. Results? (1) Uniform side-wall wear—longer life! (2) The belt gets a full side-width grip on the pulley—carries heavier loads without slippage. This cuts belt costs and saves power.

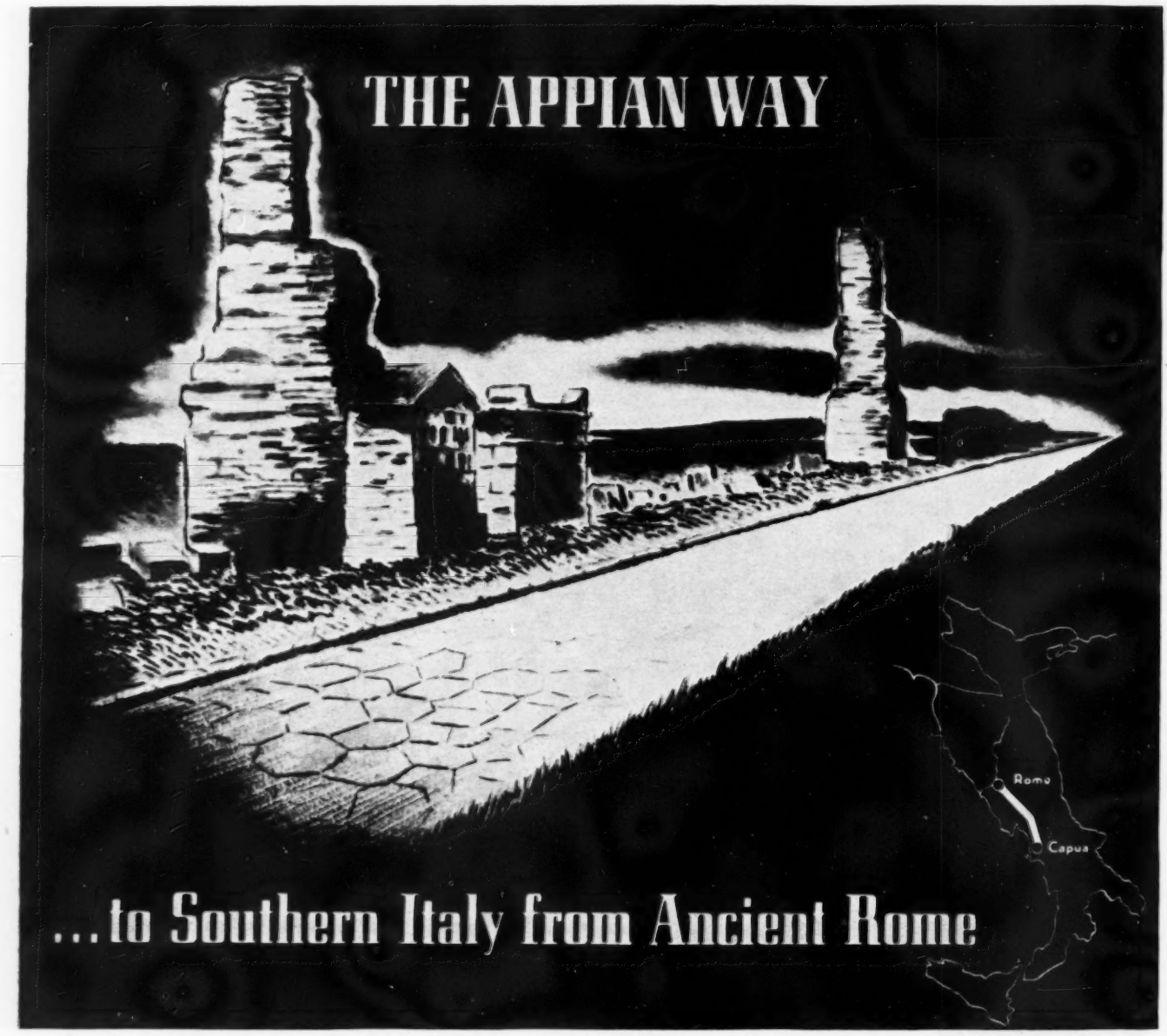
Only belts built by Gates are built with the Concave side, which is a Gates patent.

THE GATES RUBBER COMPANY

Engineering Offices and Stocks in All Large Industrial Centers

GATES VULCO ROPE DRIVES

Chicago, Ill. 549 West Washington
New York City 215-219 Fourth Avenue
Birmingham, Ala. 405 Liberty National Life Bldg.
Los Angeles, Cal. 2240 East Washington Blvd.
Denver, Colo. 999 South Broadway
Dallas, Tex. 2213 Griffin Street
Portland, Ore. 333 N. W. 5th Avenue
San Francisco, Cal. 2700 16th Street



The same efficiency and foresight which brought about the world's greatest construction achievements are required to solve ever-changing problems in the textile field today.

During the past quarter-century of textile development, Robert and Company has directed modernization and expansion programs involving numerous problems of architecture and engineering. Some of these projects were large—others small—but each was completed with speedy and economical efficiency.

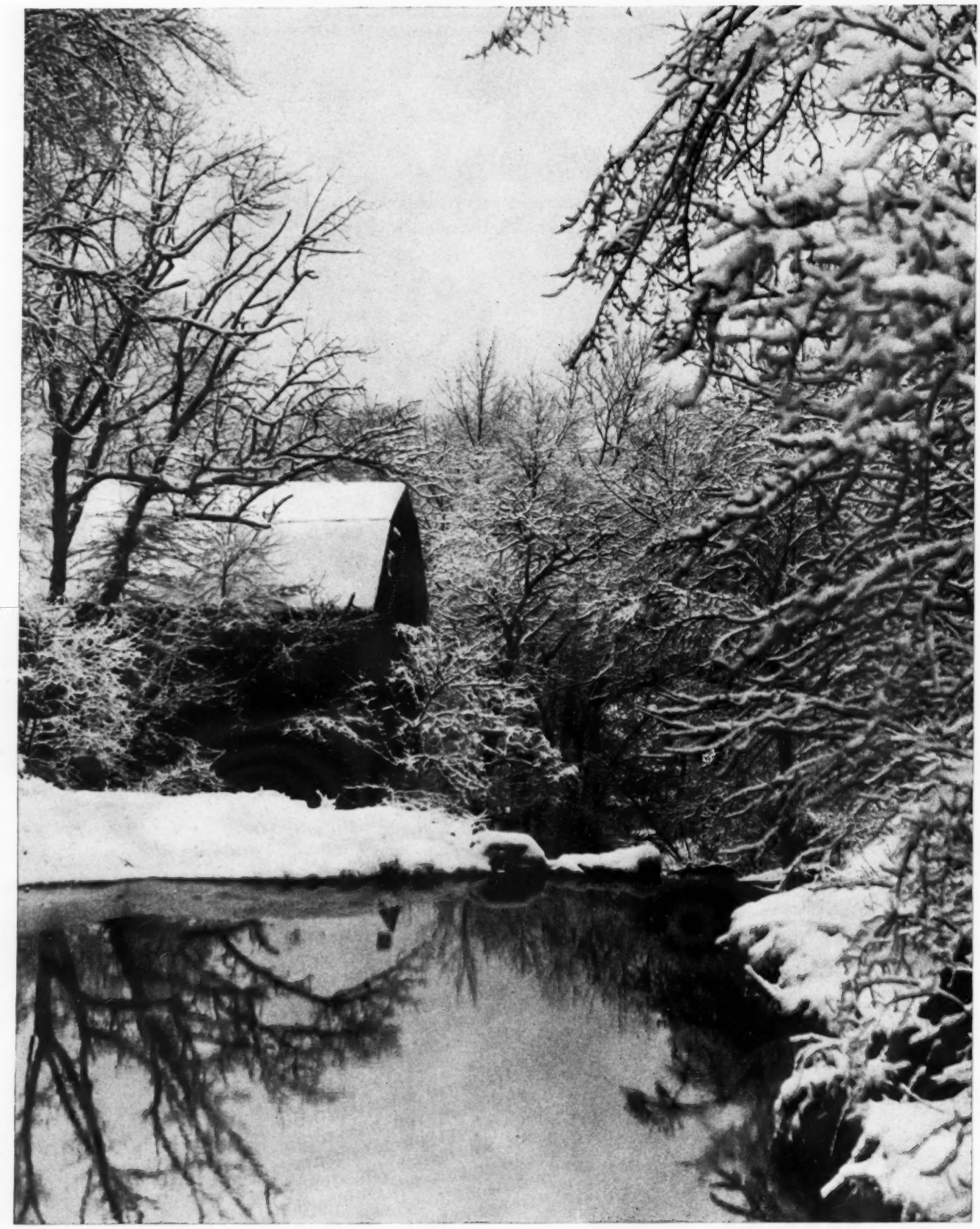
However simple or involved your *own* improvement program may be, we are ready to meet it: with the full experience and professional facilities which have caused so many textile clients to call upon us for repeated service.

ROBERT AND COMPANY
INCORPORATED

Architects and Engineers

NEW YORK ✦ ATLANTA ✦ WASHINGTON

There's Thrifty Lubrication in every drop
SHELL TEXTILE OILS
KEEPING up with tight production schedules is wearing enough without your having to worry about safe lubrication of your machines. That's why you'll appreciate the outstanding qualities of Shell Textile Oils.
Instead of 3 or 4 oils covering a score of lubricating uses, Shell scientists have designed a specific oil for each type of textile-machine lubrication.
•
CALL IN THE SHELL MAN NOW. Let him show you how to get the most from your lubricants without sacrificing the quality of your goods. His unbiased recommendations will be made without obligation.
SHELL



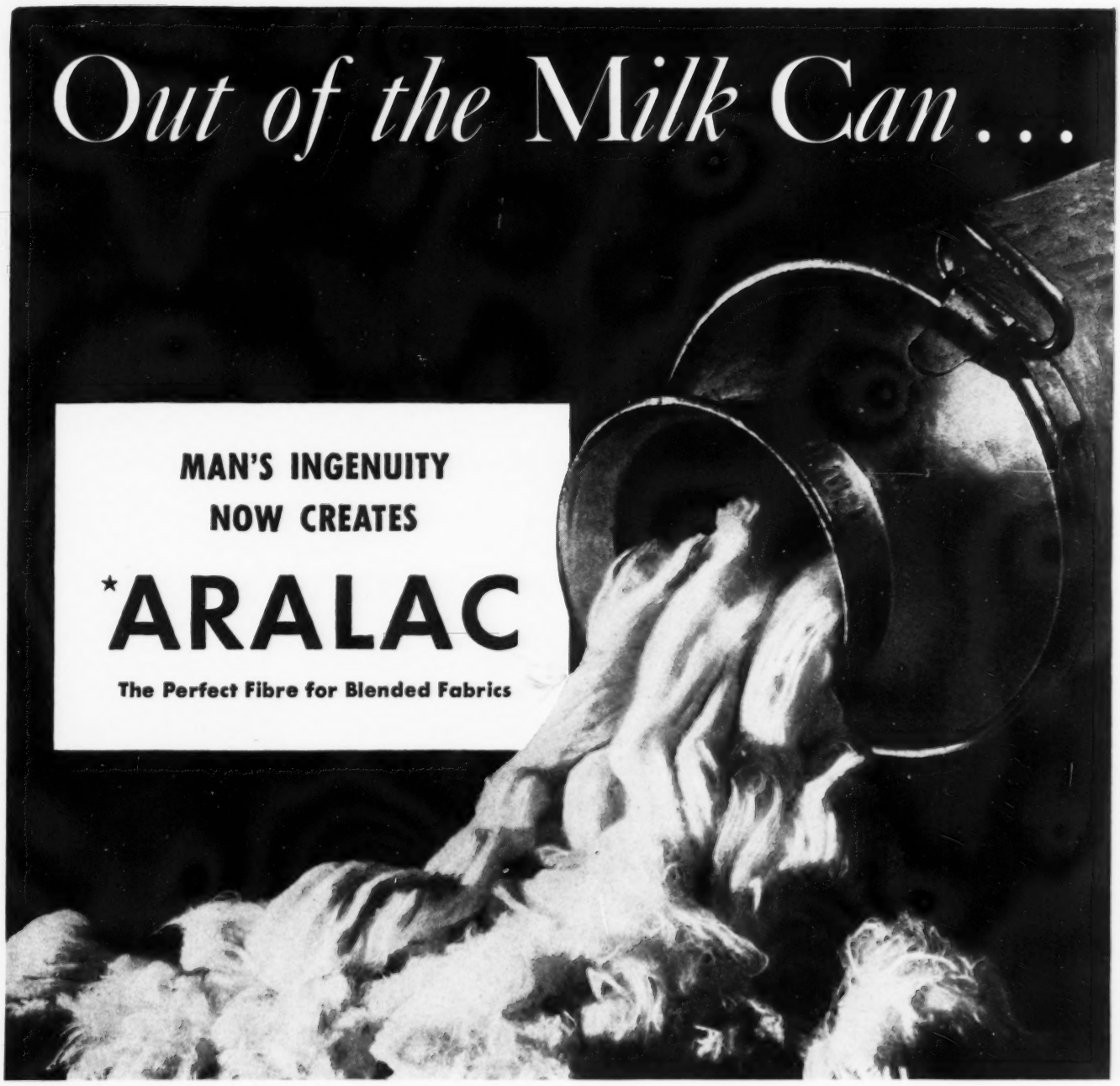
MAY all things in your New Year have the "sparkle" and freshness of newly fallen snow. The present turmoil is history repeating itself, out of which shall be born days based on goodness and righteousness * Let's all do our part to bring a contentment and happiness that shall endure * We here in this neck of Uncle Sam's woods—"Good Old New England"—wish one and all good fellowship and good will.

HOWARD BROS. MFG. CO.

Harry C. Bosley,

President

Out of the Milk Can . . .



Man again wrests from nature a secret of her fundamental chemistry. And a new frontier of technical development opens on limitless horizons. To the textile experts of America we offer ARALAC—a new fibre possessing possibilities so varied and so extensive that even we who make it have not as yet fully explored their far-flung reaches.

Produced from milk casein—ARALAC is a protein fibre, just as wool, alpaca, camel's hair and fur are protein fibres. At the same time it attains characteristics individually its own. It combines the insulating and absorption properties of wool with the gentleness of down—yet converts into workable yarns. Already employed in limited fields, ARALAC stands ready to serve a far wider world. We invite the cooperation of the nation's technicians in achieving its full possibilities.

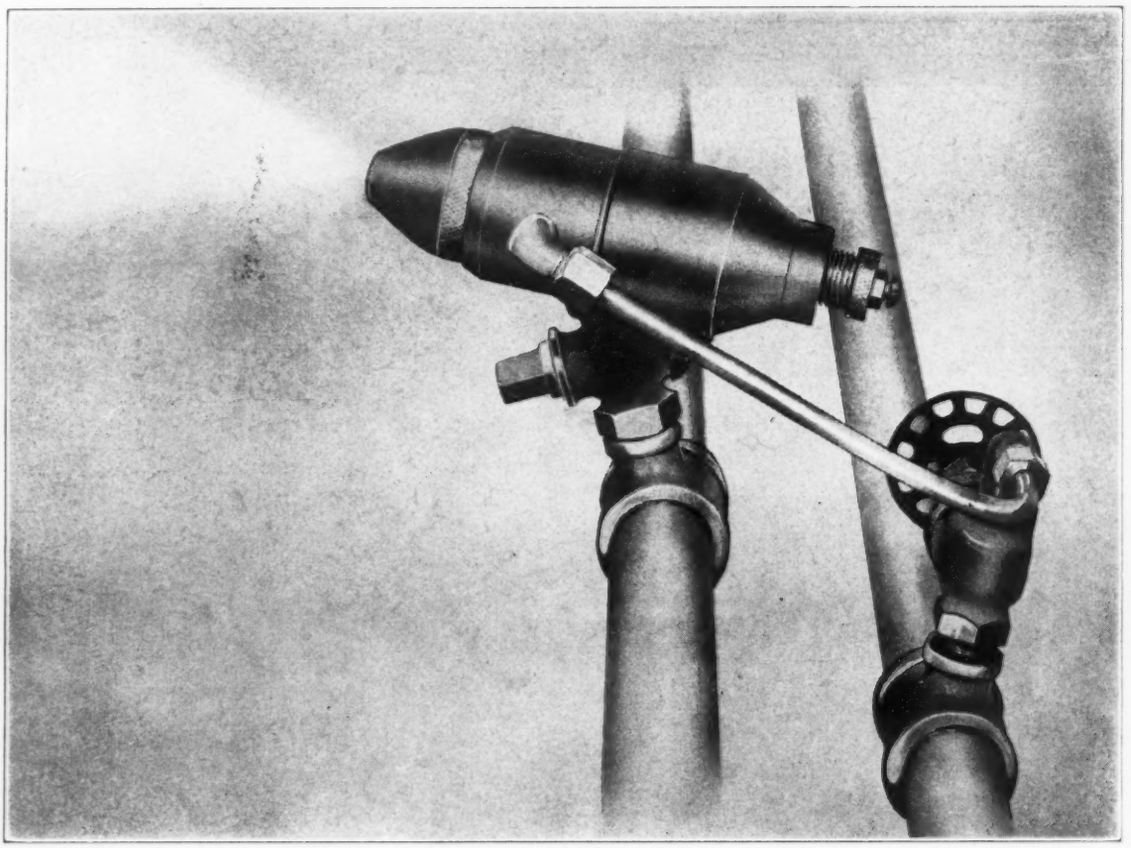
★Trade Mark Reg. U. S. Patent Office

ARALAC, INC.

Taftville, Connecticut

ARALAC, produced by a division of NATIONAL DAIRY PRODUCTS CORPORATION, represents but one of the many contributions this nation-wide organization is making toward the more efficient utilization of America's agricultural resources.

CUT HUMIDIFIER POWER COSTS IN HALF WITH THE RIHCO TYPE B HEADS



Patent applied for

These heads mix the air and water *inside* the head instead of *outside,* and put *all* the air to work instead of only *part* of it.

They operate on half as much air as ordinary heads and at lower pressure; therefore using *less* than *half* the power.

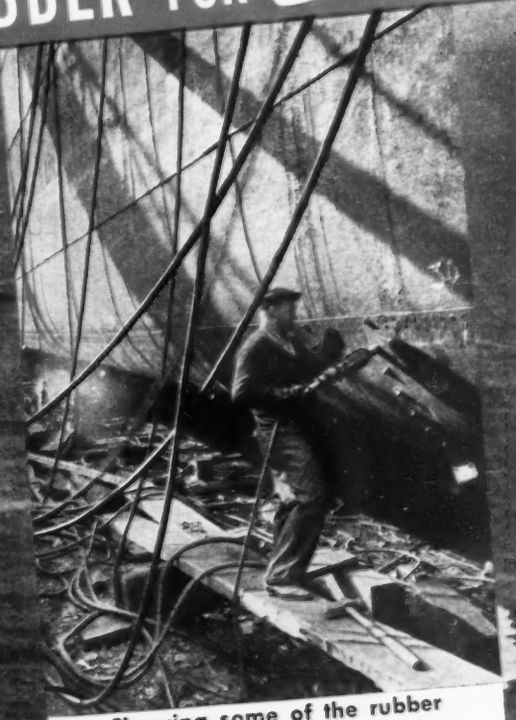
Any mill with atomizers that has as much as half the needed capacity can get all that is needed by replacing gravity heads with Rihco Heads, and with no additional compressor or power.

AldricH MachinE

Greenwood, **WorkS** South Carolina

FROM THE *Ways* TO THE *Waves*—

MANHATTAN HELPS WITH "RUBBER" FOR *Ships*



Showing some of the rubber hose used in building a ship.

In the shipbuilding miracle that is about to reach an output of a ship a day, "rubber" plays an essential part.

As blueprints are being transmuted to metal at a pace that will produce a two-ocean navy months ahead of schedule, "rubber" is revealed not only as a critical material, but as a prodigy in its own right.

"Rubber" is not *one* material, but an array of materials, born of research and bred of experience in laboratories like MANHATTAN'S. Here, new compounds were pioneered, tested and retested and then proved in services where nothing else would do as well.

Natural and synthetic rubbers which resist oils, gasoline, salt water and chemical action have speeded the building, servicing and sailing of ships.

Hulls are welded, rivets driven, oil bunkers filled, engines are fed, channels are suction-dredged, vibration is dampened, submarine battery compartments are protected, propeller shafts rubber covered, salt water systems rubber lined, gun decks given foot security, exhausts in diesel-driven craft are almost silenced and given added years of life—all with rubber.

Hoists and cranes are controlled with asbestos friction material. Weld burrs and castings are ground smooth with abrasive wheels—rubber bonded and vibration dampened to reduce fatigue, to speed production.

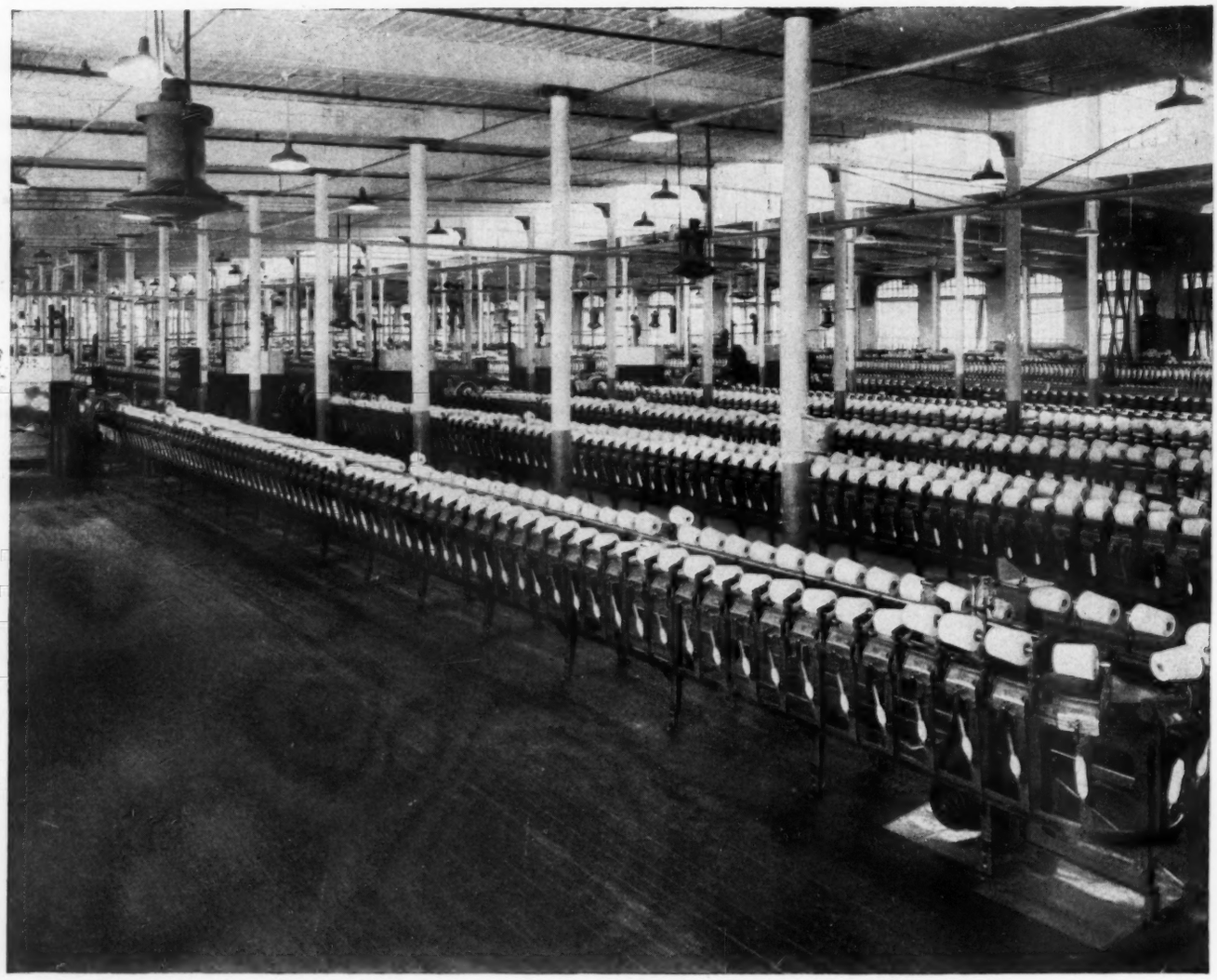
A whole succession of improved or new products—pioneered and developed by MANHATTAN—is now "in training" for industry.

A Few of Many MANHATTAN Products for Ship and Yard

- Porthole Rubber
- Rubber Tiling
- Packing and Gaskets
- Fire Hose
- Air, Steam, Water Hose
- Welding Hose
- Paint Spray Hose
- Marine Exhaust Hose
- Rubber Deck Coverings
- Rubber-Lined Tanks
- Rubber-Lined Salt Water Systems
- Asbestos Electric Cable Insulation

KEEP AHEAD WITH MANHATTAN

THE MANHATTAN RUBBER MANUFACTURING DIVISION
of RAYBESTOS-MANHATTAN, INC.
EXECUTIVE OFFICES and FACTORIES • • • PASSAIC, NEW JERSEY



AUTOMATIC TRAVELING SPINDLE WINDING

KNITTING CONES ***DYE TUBES***
WARPING CONES ***TWISTING TUBES***

LABOR IS USUALLY REDUCED 65%

LARGE SAVINGS ALSO MADE IN HANDLING TO AND FROM WINDERS

BIG SIX POUND CHEESES IN TWISTER CREELS MAKE A FURTHER SAVING IN CREELING

AUTOMATIC WINDING IS NO LONGER A NOVELTY. IT IS STANDARD IN ALL PROGRESSIVE MILLS

LABOR FREED IN THE WINDING AND WARPING DEPARTMENT IS AVAILABLE FOR INCREASED PRODUCTION THROUGHOUT THE MILL

THIS EQUIPMENT IS MADE ONLY BY

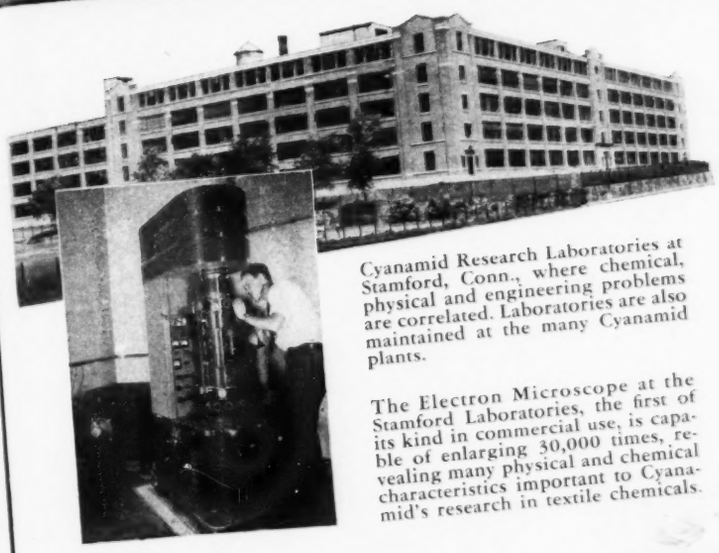
ABBOTT MACHINE COMPANY

WILTON, N. H.

Southern Representative, L. S. Ligon, Greenville, S. C.

RESEARCH!

THE EXTRA VALUE IN CYANAMID QUALITY PRODUCTS FOR THE TEXTILE INDUSTRY



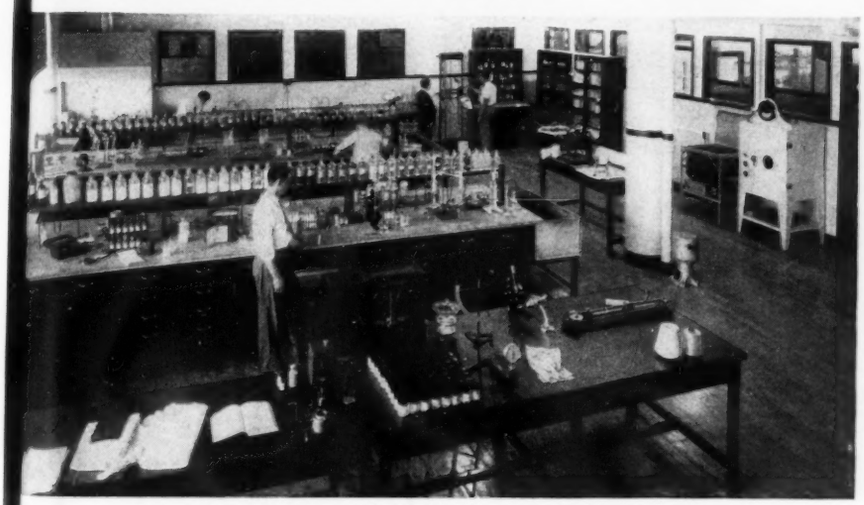
Cyanamid Research Laboratories at Stamford, Conn., where chemical, physical and engineering problems are correlated. Laboratories are also maintained at the many Cyanamid plants.

The Electron Microscope at the Stamford Laboratories, the first of its kind in commercial use, is capable of enlarging 30,000 times, revealing many physical and chemical characteristics important to Cyanamid's research in textile chemicals.

The extraordinary demands of the times are such as to tax the ingenuity of all industry. The textile industry, too, is faced with additional burdens on its capacities, and problems as to its processes and materials. Only the best is equal to the job to be done . . . and the importance of the proper selection of raw materials to meet the new requirements is greater than ever before.

At Cyanamid, research in textile chemicals, always an important phase of the Company's activities, is directed toward advancing the means and methods of meeting present conditions, and conditions that may be faced in the future. The many chemical specialties Cyanamid supplies . . . sulphonated oils, penetrants, softeners, finishes, sizing compounds, wetting agents and others . . . are subjected to critical examination for ways to improve quality and to broaden their usefulness. New products are developed to meet new conditions and to replace others made unavailable due to the emergency. In this work Cyanamid coordinates the most modern chemical, physical testing, and analytical equipment with the talents of a highly trained laboratory staff . . . a procedure that has succeeded through the years in producing better products at lower costs and many new products of timely application to the needs of users of chemicals in industry.

Cyanamid research is devoted not only to matters of materials but also to methods and equipment as well. Cyanamid's chemists, technicians, and representatives, thoroughly trained in the fields they serve, are prepared to examine, test and counsel in relation to specific conditions in a manufacturer's own plant, and help him solve emergency and "chronic" production problems. In any matter relating to the selection and use of textile chemicals, Cyanamid is "on call" to assist you in the most practical and economical way. There is no obligation.



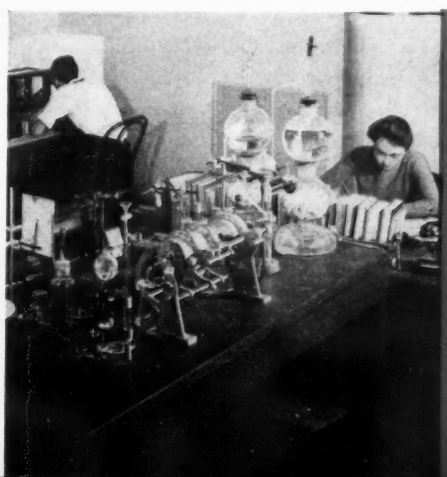
The Launderometer and Heat Curing Box for testing of resin applications are representative of the modern equipment in Cyanamid's Textile Chemicals Laboratory at Stamford.

SULPHONATED OILS; PENETRANTS; SOFTENERS; FINISHES; SIZING COMPOUNDS; DECERESOL* WETTING AGENTS

*REG. U. S. PAT. OFF.

A section of the Physical Testing Laboratory.

A corner of the Micro-Analytical Laboratory.



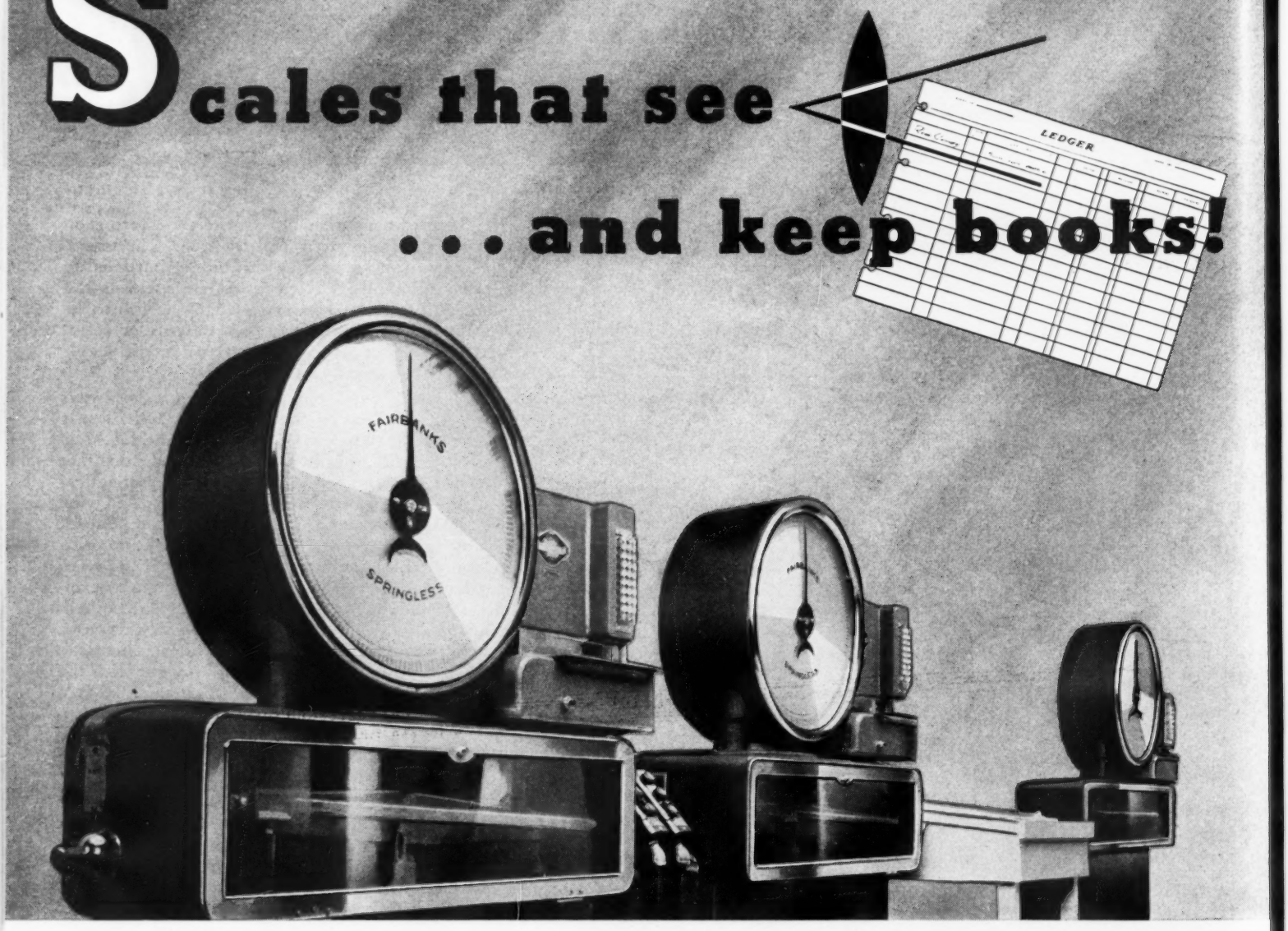
AMERICAN CYANAMID & CHEMICAL CORPORATION

A UNIT OF AMERICAN CYANAMID COMPANY

30 ROCKEFELLER PLAZA · NEW YORK, N. Y.

DISTRICT OFFICES: 2333 Wilkinson Boulevard, Charlotte, N. C.; 89 Broad St., Boston, Mass.; 401 N. Broad St., Philadelphia, Pa.; Russell & Bayard Streets, Baltimore, Md.; 850 Leader Building, Cleveland, Ohio; 20 N. Wacker Drive, Chicago, Illinois; Miller Road, Kalamazoo, Michigan; 931 Fisher Building, Detroit, Mich.; 900 Shell Building, St. Louis, Missouri; Azusa, California

Scales that see ... and keep books!



IT costs money to be inaccurate with "tonnage"—and it costs more money to be s-l-o-w.

In one of the most modern coal preparation plants in the world, Elkhorn Coal Company, Wayland, Ky., you will find a battery of the most modern scales handling "tonnage" at high speed.

These Fairbanks Scales with "electric eyes" shut off flow to hoppers automatically when the pre-set weight is obtained. A printed record is made of each operation automatically, and an ingenious keying system credits the tonnage to the man who mined it.

To make errors in weighing well-nigh impossible, to fit weighing speedily into the production flow, to protect alike the buyer, seller, and all whom weighing affects is the aim of this, the most experienced and most modern organization of scale makers.

There are Fairbanks Scales in types for your every weighing need... and Fairbanks Scale Engineers are available at your call.

Fairbanks, Morse & Co., Dept. A-208, 600 S. Michigan Ave., Chicago, Illinois. Branches and service stations throughout the United States and Canada.

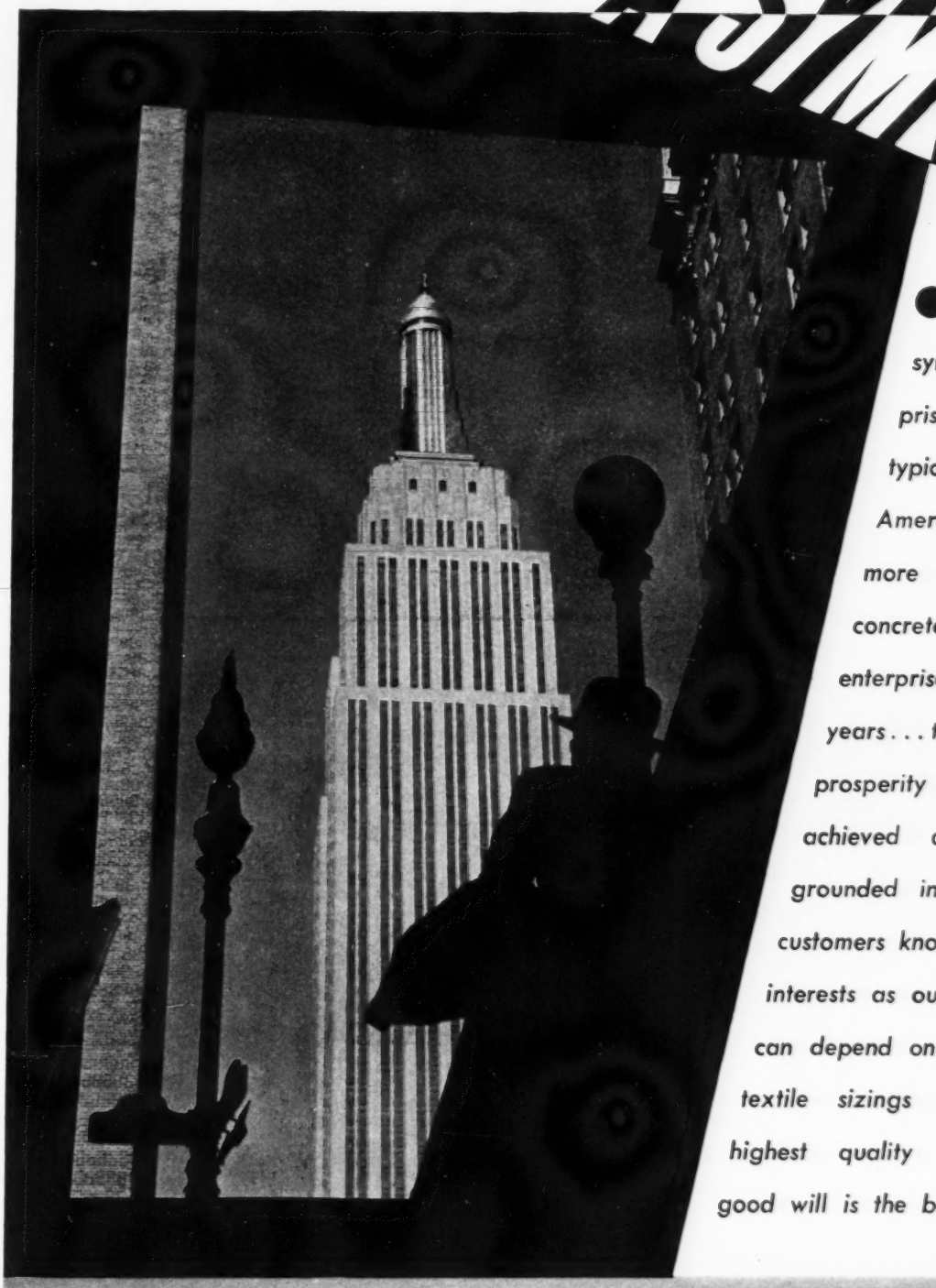
We Want To Help You

It is our desire to do everything we can to aid in the speed-up of American production. Our scale engineers can possibly suggest new and more efficient use of your present scales or modification which will expand their capacity.

FAIRBANKS·MORSE FAIRBANKS SCALES **SCALES**

DIESEL ENGINES ELECTRICAL MACHINERY RAILROAD EQUIPMENT WASHERS-IRONERS STOKERS
PUMPS MOTORS WATER SYSTEMS FARM EQUIPMENT AIR CONDITIONERS

IT'S JUST A SYMBOL



Our sky-climbing buildings symbolize American enterprise and achievement . . . typical expressions of that American way of life which is more enduring than bedrock, concrete and steel. Stein-Hall enterprise over the past 76 years . . . through war and peace, prosperity and depression . . . has achieved a business so firmly grounded in fair dealing that our customers know we regard their best interests as our own. They know they can depend on us to serve them with textile sizings and finishings of the highest quality and efficiency. Their good will is the bedrock of our business.

SEVENTY-SIX YEARS OF STARCH SERVICE

SH STEIN, HALL & COMPANY, Inc. SH

285 Madison Avenue • New York — 1011 Johnston Bldg. • Charlotte, N. C.

LABORATORIES AT . . NEW YORK • CHICAGO • CHARLOTTE • PROVIDENCE • LONG ISLAND CITY N. Y.

A TEXTILE STARCH FOR EVERY TEXTILE PURPOSE

THE RIGHT NOTE

The right note for your product to qualify as a season's "hit" may be a matter of identification. A stunning, new box wrap, a rich embossed seal, a Prestomark label, a unique package insert, or a new, informative dry transfer—all these are in the realm of identification and within the scope of Kaumagraph service. It takes specialized knowledge to strike the right note—right for sales appeal, right for legal requirements, right for the new economy imposed by war-time. A few minutes with a Kaumagraph Identification Man may help you find the right note. Why not send for him now?

Why not get Kaumagraph Embossed Seals for Quality Emphasis?

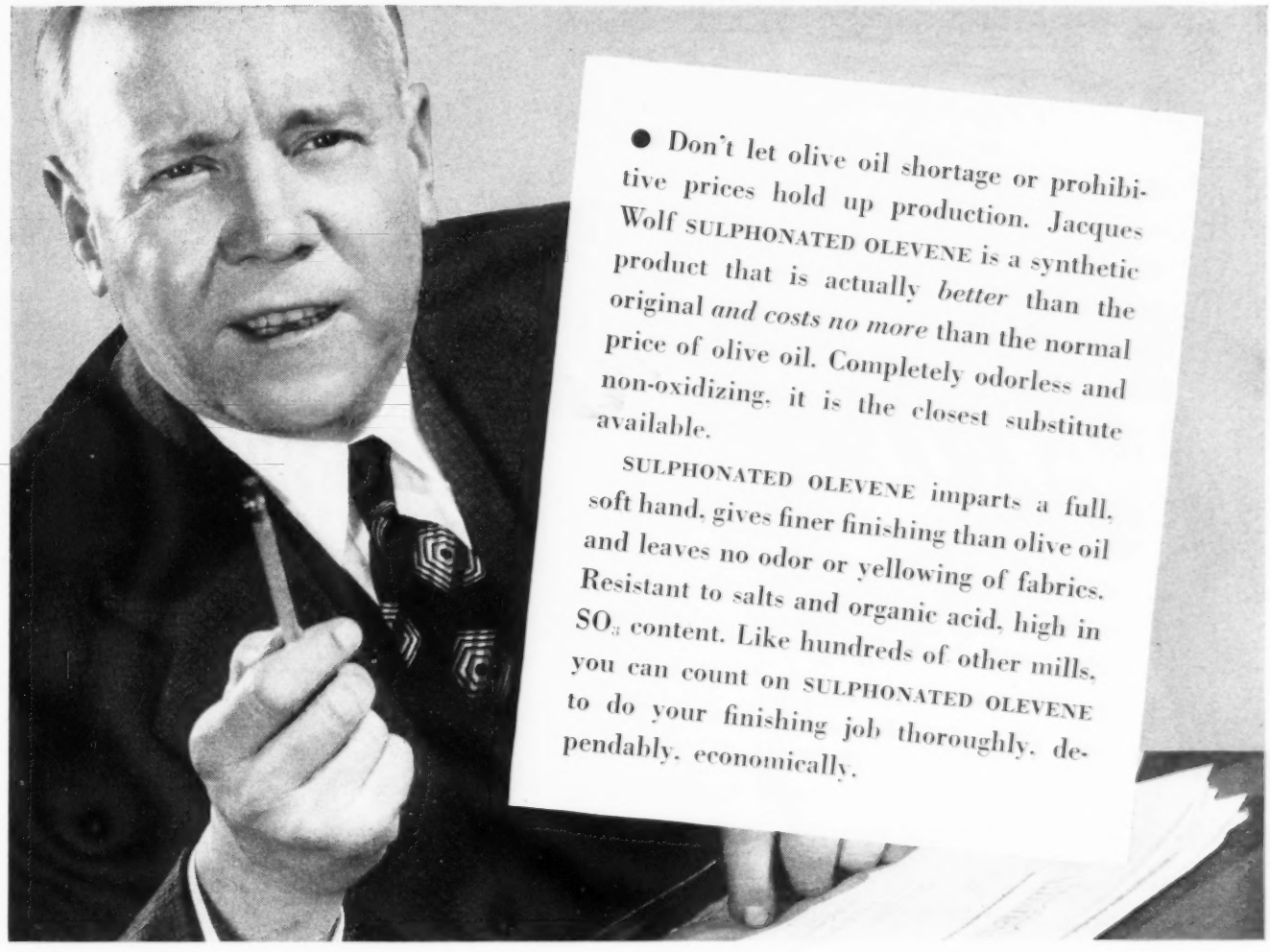
Identification Headquarters

KAUMAGRAPH
Wilmington, Delaware

Dry Transfers
Prestomarks
Embossed Seals
Lithographed packaging

New York Office, 16-22 E. 34th St. · · Representatives in Principal Textile Centers of the World

Clear that bottleneck... use SULPHONATED OLEVENE



● Don't let olive oil shortage or prohibitive prices hold up production. Jacques Wolf SULPHONATED OLEVENE is a synthetic product that is actually *better* than the original *and costs no more* than the normal price of olive oil. Completely odorless and non-oxidizing, it is the closest substitute available.

SULPHONATED OLEVENE imparts a full, soft hand, gives finer finishing than olive oil and leaves no odor or yellowing of fabrics. Resistant to salts and organic acid, high in SO_3 content. Like hundreds of other mills, you can count on SULPHONATED OLEVENE to do your finishing job thoroughly, dependably, economically.

IMPORTED GUMS. Arabic, Tragacanth and Karaya in crude and powder form for printing, sizing and finishing. Also solutions of these gums processed to remove all bark and dirt.

SPECIAL PRINTING PREPARATIONS. Superclear and Supertex—made clear and fluid by special patented processes.
OTHER PRINTING PRODUCTS. Steam Black, Acetate of Chrome, Textile Gum C. A. 36.

WOLF BRAND PRODUCTS

JACQUES WOLF & CO.
Chemicals **PASSAIC, N. J.**

WAREHOUSES: Providence, R. I., Philadelphia, Pa., Utica, N. Y., Chicago, Ill., Greenville, S. C., Chattanooga, Tenn., Knoxville, Tenn., Charlotte, N. C., Milwaukee, Wisc., Columbus, Ga.
Midwestern Distributor: Bradley F. Marthens, Chicago, Ill.

A photomicrograph of a knot woven into fabric.

Tumor!

Knots in fabric—*textile tumors*—are as malignant and incurable as the worst tumor known to medicine. But, unlike medicine, a preventive has been found for them.

Knot troubles go back to the yarn. They are in the yarn when delivered to the mill or the mill puts them in when the yarn breaks. Every broken filament, every weak spot may ultimately produce a knot.

Industrial solved the problem by developing "The Continuous Process," an entirely new method of manufacture. By this method Spun-lo yarn is spun, bleached, dried, treated and twisted as a single thread in continuous operations without once being touched by human hand. As a result, it is uniform in strength and virtually free from knots and broken filaments.

"Tumors" and other mill diseases are being prevented by this yarn that makes better fabric and fewer seconds with greater efficiency and lower production costs.

Write for your copy of the booklet "Uniformity Rides the Reels", which describes the "continuous process" in detail.

"Continuous Process"

Spun-lo Rayon

Reg. U. S. Pat. Off.

INDUSTRIAL RAYON CORPORATION • CLEVELAND, OHIO

NEW YORK OFFICE • 500 FIFTH AVENUE

It's the
POINT
UNBRAKO
SELF-LOCKING
HOLLOW SET SCREWS
with the
KNURLED POINTS
BY ordering standard "Unbrako" sizes whenever possible you will aid prompt deliveries and help us to maintain peak output. Thanks.

It's the *Knurled* "Unbrako" cup point that does the trick . . . the point that more and more mills are using exclusively to prevent the maintenance costs and delays caused when ordinary set screws fail to hold.

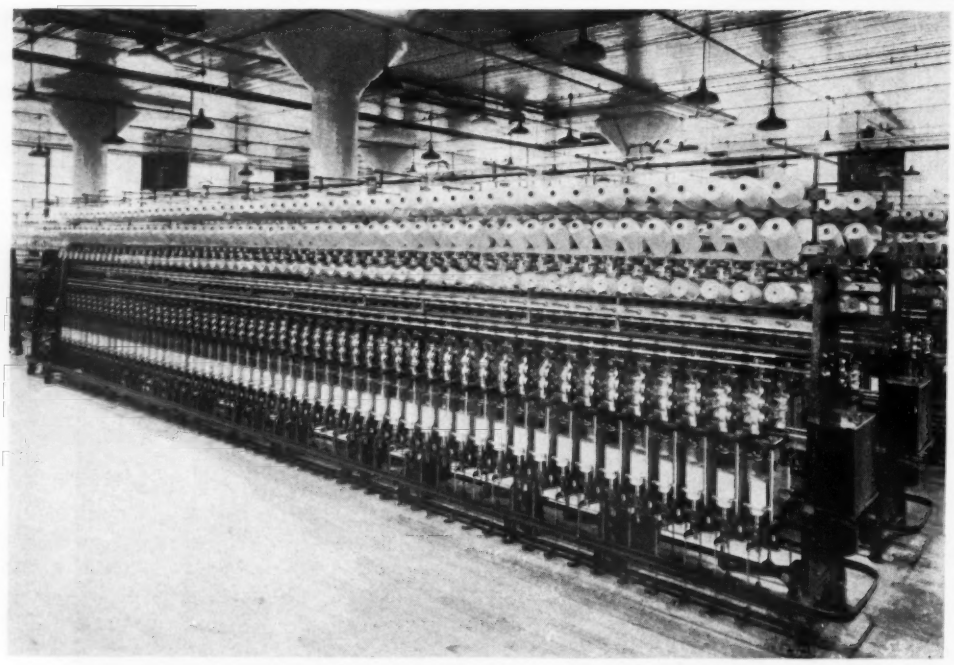
Tightened up no more than usual, these famous "Unbrako" Self-Lockers come to grips with the severest vibration . . . HOLD TIGHT no matter what! And the Knurled point retains its ability to lock regardless of how often applied.

There's one good reason why you should specify "Unbrako" Self-Lockers on your next order—it pays! Try it.

The KNURLING of Socket Screws originated with "UNBRAKO" years ago.

STANDARD PRESSED STEEL CO.
JENKINTOWN, PENNA. BOX 582
— BRANCHES —
BOSTON • DETROIT • INDIANAPOLIS • CHICAGO • ST. LOUIS • SAN FRANCISCO

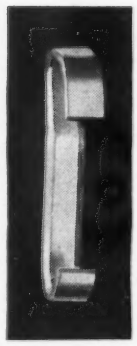
Reg. U.S.Pat. Office
UNBRAKO Screw Products
Pat'd & Pat's Pend.



400 Million Pounds

IN 1920, the textile mills of the United States used nine and a half million pounds of rayon. In 1940, the figure had jumped to 388 million pounds; in 1941, total rayon mill consumption will run well over 400 million pounds, with some 4,000 textile mills sharing this tremendous volume.

Development of specialized twisters and other machinery for handling rayon production has paced this swift growth. Specially built ring travelers, equally important in the assurance of smooth, uniformly twisted yarn and perfect packages, have also been developed.



It takes perfectly *designed* travelers, tough travelers—and lots of them—to handle this annual volume of rayon yarn with ease and efficiency. U. S. Ring Travelers fill the bill—precision-made, tough and durable, delicately balanced and rigidly inspected for exact uniformity of size and weight.

U. S. RING TRAVELER CO.

PROVIDENCE, R. I. GREENVILLE, S. C.

AMOS M. BOWEN, Pres. and Treas.

Southern Sales Representatives:

William P. Vaughan, P. O. Box 792, Greenville, S. C.
William H. Rose, P. O. Box 792, Greenville, S. C.
Torrence L. Maynard, P. O. Box 456, Belmont, N. C.
Oliver B. Land, P. O. Box 158, Athens, Georgia

UNIVERSAL RING

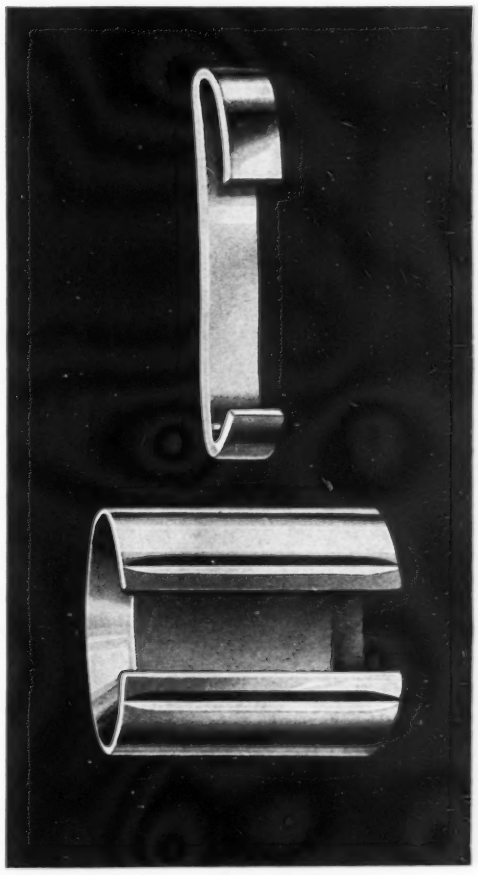
BOWEN ROUND POINT TRAVELERS
BOWEN SQUARE-POINT TRAVELERS
BOWEN IMPROVED VERTICAL BRONZE
BOWEN PATENTED BEVEL EDGE
BOWEN PATENTED NE-BOW VERTICAL
BOWEN PATENTED VERTICAL OFFSET
BOWEN FLAT OVAL AND ROUND WIRE TRAVELERS

# of Rayon Takes a Lot of Travelers and a Lot of Traveling!

Sealed metal containers guarantee that your U. S. Travelers will reach you in perfect condition, with no tampering or loss in count.

The NE-BOW PATENTED VERTICAL RING TRAVELER (shown at top in illustration) has been specially developed to meet the particular needs of the silk and rayon trade in the throwing process.

The Bowen Patented Bevel Edge feature produces ideally smooth, even yarn, and prevents split ends in throwing. By eliminating pivoting action, this traveler is kept constantly in close contact with lubricating device and assists in distributing the lubricant evenly over the entire inner surface of ring, prolonging life of both ring and traveler and promoting a more even twist.



"A Traveler for Every Fibre"

STANDARD TRAVELERS

PIVOTAN

A NEW TYPE of Leather Belting!

. . SPECIALLY DESIGNED FOR SHORT-CENTER DRIVES

Modern, *all-out* production puts a continuous strain on mechanical drive equipment—particularly belting. Meet this situation by using PIVOTAN — the modern, rapid-flexing, long-wearing leather belting — especially designed to withstand the extreme speed and rapid flexing imposed by short-center drives.*

Starting with a new tanning formula, and manufactured under rigid laboratory control — PIVOTAN belts embody a high degree of flexibility, pulling power and long life . . . insuring sustained production at a time when production is vital!

* * *

*Although developed primarily for use on pivoted motor drives, the *plus* wearing and gripping qualities of PIVOTAN make it of equal extra value on fixed center drives.

SOUTHERN BELTING COMPANY

MANUFACTURERS and DISTRIBUTORS

52th Anniversary 1890 1942 SOUTHERN BELTING COMPANY ATLANTA GA

ATLANTA

Leather Belting | Rubber Belting | V-Belts and Sheaves | Fiber and Metal Pulleys | Rock-Southern Pivoted Motor Drives | Reeves Variable Speed Transmissions

"With GULF QUALITY LUBRICANTS our frames are setting hard-to-beat production and maintenance records"

—— says this Overseer of Spinning.

The Overseer of Spinning checks the lubrication of the saddles on this modern high-speed frame. Equipment in every department of this mill is Gulf lubricated.

"Proper Lubrication also keeps Power Consumption Low"

"THANKS to Gulf quality lubricants, we are able to run our frames continuously at top speed, and to avoid shutdowns except for periodic inspection," says this Overseer of Spinning. "Result: Our frames are setting hard-to-beat production and maintenance records, and power consumption is kept at a low figure."

There are good reasons for operating records like this with Gulf quality oils and greases in service: These lubricants are scientifically manufactured to provide most efficient lubrication for every type of textile equipment. They retain their lubricating value for long periods of time even under severe operating conditions, provide positive protection at a low consumption rate, and contribute to maximum equipment performance and low power costs.

Perhaps improved operating efficiency and savings in maintenance and power costs can be obtained in *your* mill. Investigate—ask a Gulf engineer to recommend the proper application of lubricants exactly suited to each machine and each moving part. The Gulf line of more than 400 quality oils and greases is quickly available to you from 1200 warehouses located in 30 states from Maine to New Mexico. Write or 'phone your nearest Gulf office today.

GULF OIL CORPORATION · GULF REFINING COMPANY · PITTSBURGH, PA.

GULF INDUSTRIAL LUBRICATION

VITAL TO DEFENSE ☆ ☆ ☆

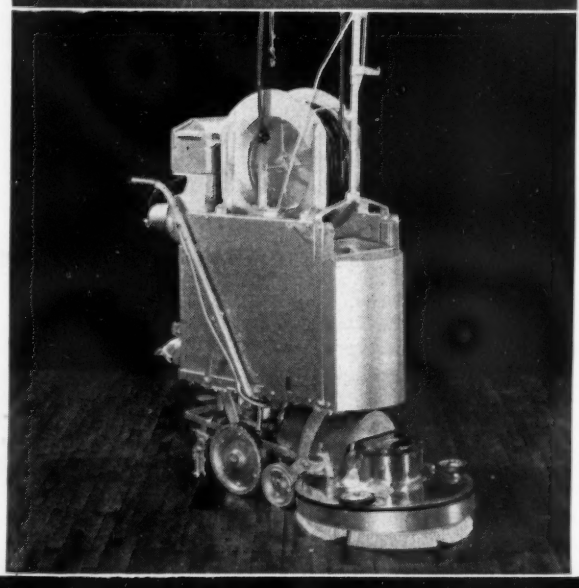
CLEAN, *Safe* FLOORS *for Workers*

In your efforts to help conserve the Nation's man-power through intensified accident prevention programs, you won't want to overlook the fact that approximately 18% of all industrial injuries were the result of falls (according to *Accident Facts*, 1941) . . . due to slippery floors and other causes.

Are you satisfied that the floor-maintenance equipment you are now using is adequate to your present needs? Is it capable of thoroughly removing oil and other slippery substances, as well as dirt, et cetera?

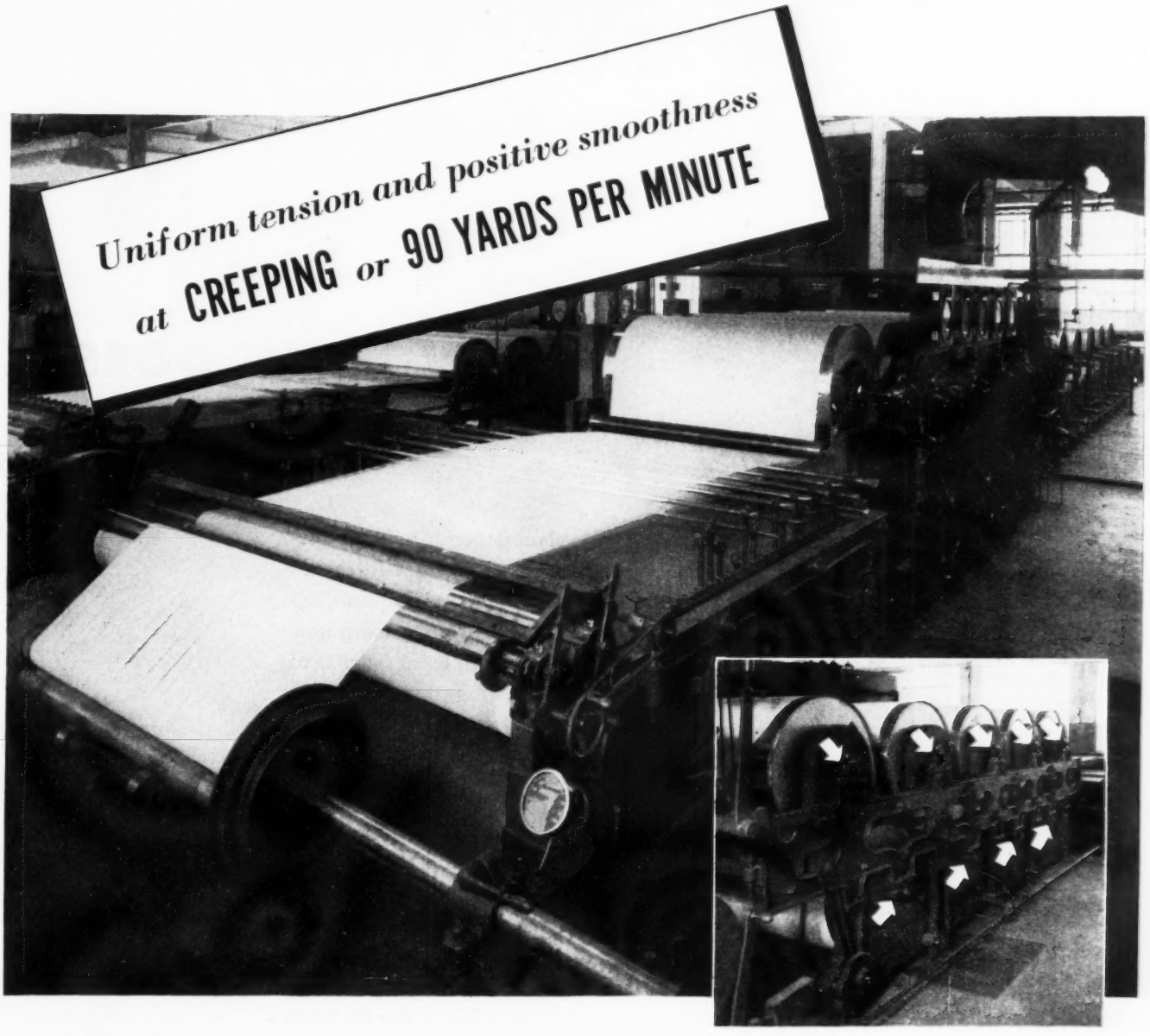
When it comes to solving individual floor-maintenance problems, *Finnell* can be of real service to you. With equipment in a range of models and sizes that meets the varied requirements of *all* the industries served, *Finnell* is prepared to give you dependable, unbiased advice as to the type and size machine that's right for *your specific needs.*

NOW IS THE TIME to check up on your floor-maintenance equipment. Without obligating you in any way, the nearby *Finnell* man will be glad to help you. For free floor survey, consultation, demonstration, or literature, phone nearest *Finnell* branch, or write Finnell System, Inc., 1301 East Street, Elkhart, Indiana.



FINNELL SYSTEM, INC.

Pioneers and Specialists in FLOOR MAINTENANCE EQUIPMENT



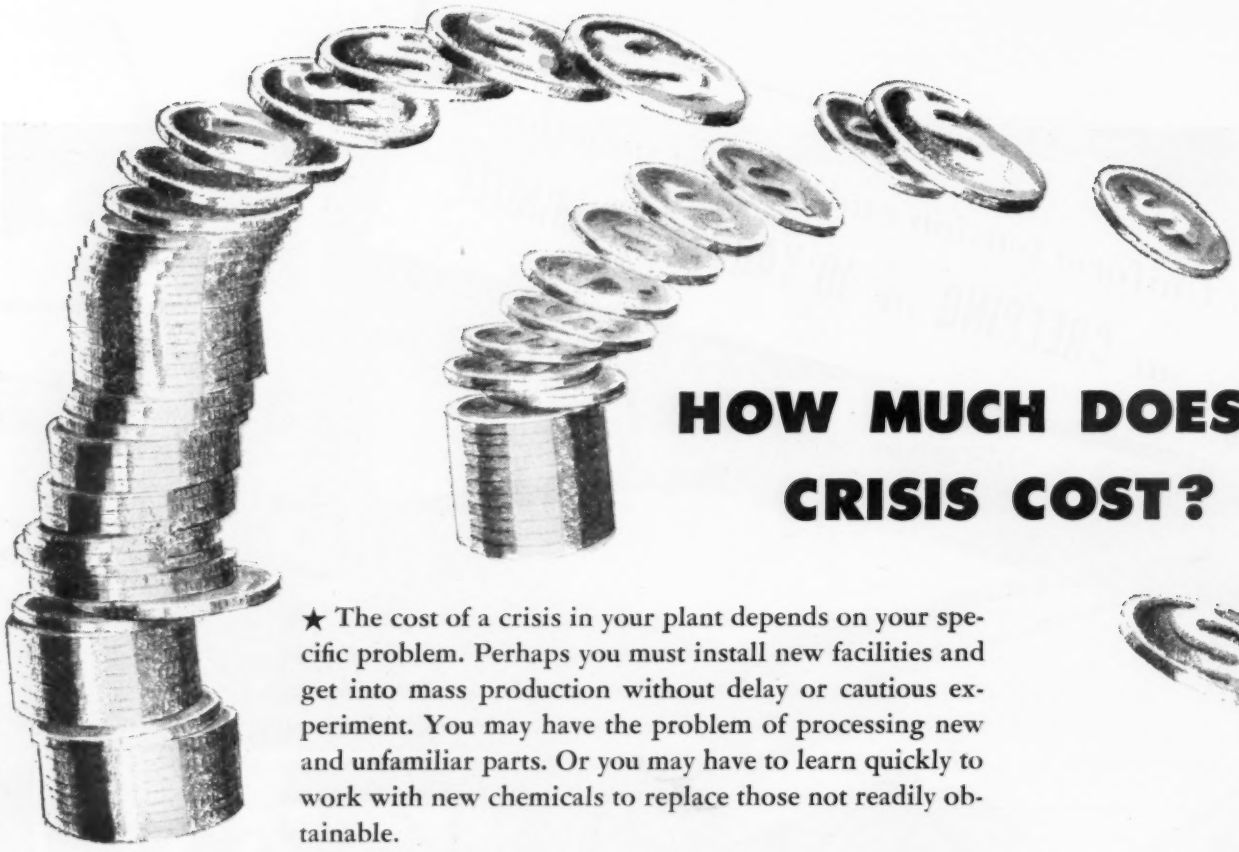
80 Fafnirs play an important part in securing friction-free balance of synchronized motion in new 9-cylinder Cocker High Speed Slasher.

This new Cocker Slasher was designed to break production and efficiency records! A speed range of 25 to 1 . . . automatically controlled acceleration and deceleration permitting speed changes without run-over on beams or strain on yarn . . . heavy vibration eliminating frames . . . patented automatic friction control . . . fingertip tension control . . . and many other outstanding mechanical improvements make it one of the most important pieces of textile equipment developed in recent years.

Altogether, 80 Fafnir high quality ball bearings have been used in the Cocker Slasher. The wide variety of Fafnir Textile Bearings made it possible to meet every requirement of good engineering and resulted in greater economy for the manufacturer.

With machinery makers, mill operating and maintenance men, you'll find that Fafnirs are selected for greater economy and efficiency. Fafnir's Balanced Design – larger balls and deeper races – mean greater load capacity and longer bearing life. For almost every spot on every piece of textile machinery, there is a standard or specialized Fafnir Ball Bearing Unit that will save power and cut maintenance. The Fafnir Bearing Company, New Britain, Connecticut. Branch Offices: Atlanta, Birmingham, Boston, Charlotte, Dallas.

FAFNIR
Ball Bearings
THE BALANCED LINE –
MOST COMPLETE IN AMERICA



HOW MUCH DOES A CRISIS COST?

★ The cost of a crisis in your plant depends on your specific problem. Perhaps you must install new facilities and get into mass production without delay or cautious experiment. You may have the problem of processing new and unfamiliar parts. Or you may have to learn quickly to work with new chemicals to replace those not readily obtainable.

To manufacturers faced with these and other problems which involve chemicals or the application of chemicals, Du Pont offers the assistance of its Technical Service staff.

With our background of experience and research, we may be able to suggest possibilities you have not yet considered. Perhaps the Du Pont laboratories can supply technical information which will help you find suitable new materials or methods. The results of research in unrelated fields may have an unexpected application to the problem at hand.

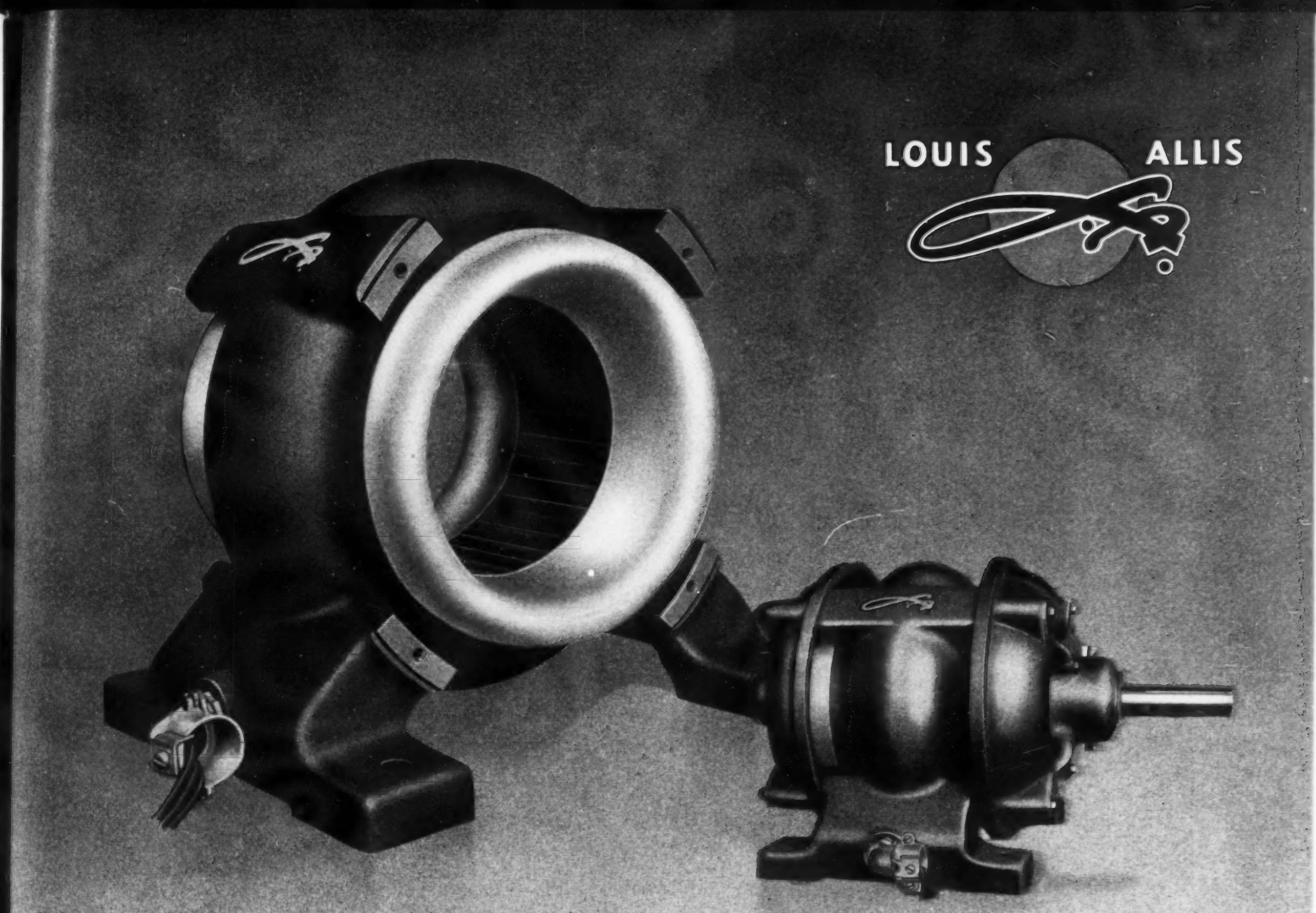
Naturally, there are situations where little or nothing can be done at present. When in our opinion such a condition exists, we will frankly tell you so.

And when this period of unusual stress is past, the skill and competence acquired during 139 years of Du Pont chemical research will still be available to assist you in readjusting your program to normal requirements.

DU PONT
REG. U. S. PAT. OFF.

E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED

THE R. & H. CHEMICALS DEPARTMENT
WILMINGTON, DELAWARE



SELF-CLEANING TEXTILE MOTOR

The very first self-cleaning textile motor was originated, developed and pioneered by The Louis Allis Co.

The original installation of about four hundred motors is still giving continuous, dependable, trouble-free performance in an important Georgia cotton mill.

The time-tested protective coating with which the stator windings are covered, forms a smooth hard glossy surface that will not chip, crack or soften from heat and radiates heat rapidly.

Lint, dust and non-metallic particles cannot stick or collect to this smooth, hard surface.

About sixteen years of continuous service has proved the practical dependability of this protective coating.

As the pioneer builder of this type motor—we have more actual years of manufacturing and performance experience than has any other motor manufacturer.

The original Louis Allis Self-Cleaning Textile Motor does not include a single new experimental product or type construction.

It is a thoroughly proved dependable motor.

Bulletin No. 511C will be cheerfully sent upon request.

THE LOUIS ALLIS CO., MILWAUKEE, WIS.

How'd you like to have

"MY PRIVATE SECRETARY"?

YOU can secure from COTTON a valuable and efficient secretary (though not quite as attractive as the one pictured above), in the form of a valuable book which is being widely acclaimed by textile men.

A long felt need of practically all textile executives and supervisors is filled in this new book "My Private Secretary," just produced by COTTON. This book, compiled by F. Gordon Cobb, contains a comprehensive set of mill calculations, constants, tables, etc., for which the mill man will find constant use, but its unique and striking feature is a section of forms, so designed that, when filled in by the user, will provide, in one pocket-size volume, a complete record of a man's mill or department, so that he can readily answer practically any question about his job.

Practically all textile men have much useful information which they wish to record, but, too frequently, one memorandum is left at the desk, another is at home, others cannot be located. "My Private Secretary" was designed to provide in one handy volume all of this desirable information, along with useful rules, tables, etc. The specially prepared forms are so designed that comparable records of several plants may be recorded, or these spaces used to indicate changes from one year to the next for a single plant.

Among the rules and information which the book, filled in, will contain, are the following:

1. The draft of any machine in the mill.
2. An easy way to figure all drafts for every machine in the mill.
3. A short method for obtaining the production of any machine in the mill.
4. The speed of any machine or part of any machine, such as r.p.m. of beaters, r.p.m. of card cylinders, card doffers, r.p.m. of front rolls, spindles, loom speeds, etc.
5. The twist gear, draft gear or lay gear on any of your machines.
6. How much roving or yarn there is on any bobbin, spool or beam.
7. The specifications of the different machines, such as the number of spindles and gauge, kind of machine, weight of product, etc.
8. The standard and actual twist, lays per inch, production and weight of all yarns compared.
9. A simple method of obtaining the actual number of yarns needed to produce a style of goods.
10. A quick method of getting loom production
11. A quick method of getting spinning production or hanks.
12. A quick method of getting speeder, intermediate or slubber production.
13. How to calculate the yarn space in the reeds you buy.
14. All information necessary to take stock.

"COTTON", Grant Bldg., Atlanta, Ga. 1-42

I want to get **"MY PRIVATE SECRETARY."** Please enter my subscription to COTTON for 3 years and send me copy of this book.

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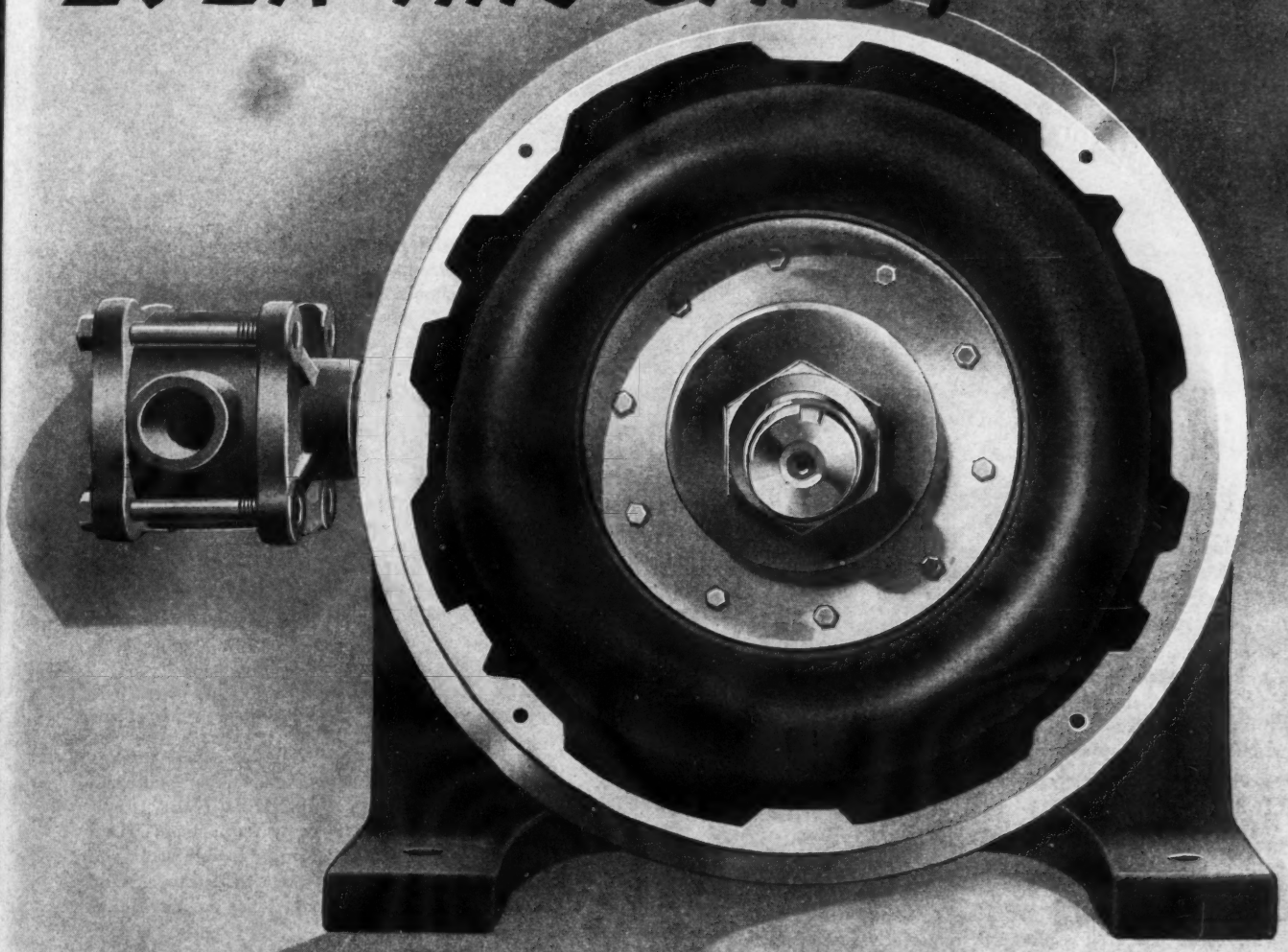
Name of Mill _____

Position _____

"My Private Secretary," in a durable cover, printed in gold, contains 112 pages. It is 4 by 7 inches and fits readily into a coat or trouser pocket. You can secure it together with a 3-year subscription to COTTON. If you are already a subscriber, expiration date of your subscription will be advanced 3 years. Fill in and mail the coupon today.

EVEN AIR GAPS!



Accurately ground stator bore of Louis Allis induction type motors helps to insure even air gaps and precision electrical balance.

Precision fit, selected ball bearings, help to insure even air gaps.

And these—supported by close tolerance machining of stator housing and bearing brackets—and rigid multiple inspection—*insures even air gaps* in Louis Allis induction type electric motors.

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Firmly anchored, triple insulated stator windings—in a scientifically braced, extra heavy one-piece cast iron housing insures extra rigidity—and smooth flowing, dependable power on the very toughest jobs.

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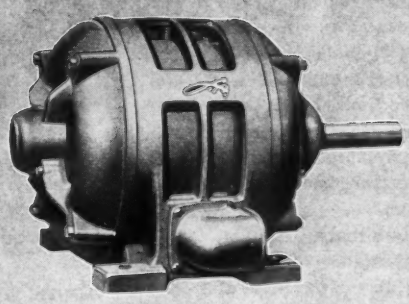


Write for a copy of our new illustrated catalog No. 701

We earnestly solicit your inquiry on your very next electric motor requirement.

THE LOUIS ALLIS CO., MILWAUKEE, WIS.

Defense Savings Pay-Roll Allotment Plan

How company heads can help their country, their employees, and themselves

voluntary pay-roll allotment plan

helps workers provide for the future

helps build future buying power

helps defend America today

This is no charity plea. It is a sound business proposition that vitally concerns the present and future welfare of your company, your employees, and yourself.

During the post-war period of readjustment, you may be faced with the unpleasant necessity of turning employees out into a confused and cheerless world. But you, as an employer, can do something *now* to help shape the destinies of your people. Scores of business heads have adopted the Voluntary Pay-roll Allotment Plan as a simple and easy way for every worker in the land to start a *systematic* and *continuous* Defense Bond savings program.

Many benefits . . . present and future. It is more than a sensible step toward reducing the ranks of the post-war needy. It will help spread financial participation in National Defense among all of America's wage earners.

The widespread use of this plan will materially retard inflation. It will "store" part of our pyramiding national income that would otherwise be spent as fast as it's earned, increasing the demand for our diminishing supply of consumer goods.

And don't overlook the immediate benefit . . . money for defense materials, quickly, continuously, *willingly*.

Let's do it the American way! America's talent for working out emergency problems, democratically, is being tested today. As always, we will work it out, without pressure or coercion . . . in that old American way; each businessman strengthening his *own* house; not waiting for his neighbor to do it. That custom has, throughout history, enabled America to get things done *of its own free will*.

In emergencies, America doesn't do things "hit-or-miss." We would get there *eventually* if we just left it to everybody's whim to buy Defense Bonds when they thought of it. But we're a nation of businessmen who understand that the way to get a thing done is to *systematize* the operation. That is why so many employers are getting back of this Voluntary Savings Plan.

Like most efficient systems, it is amazingly simple. All you have to do is offer your employees the convenience of having a fixed sum allotted, from each pay envelope, to the purchase of Defense Bonds. The employer holds these funds in a separate bank account, and delivers a Bond to the employee each time his allotments accumulate to a sufficient amount.

Each employee who chooses to start this savings plan decides for himself the denomination of the Bonds to be purchased and the amount to be allotted from his wages each pay day.

How big does a company have to be? From three employees on up. Size has nothing to do with it. It works equally well in stores, schools, publishing houses, factories, or banks. This whole idea of pay-roll allotment has been evolved by businessmen in cooperation with the Treasury Department. Each organization adopts its own simple, efficient application of the idea in accordance with the needs of its own set-up

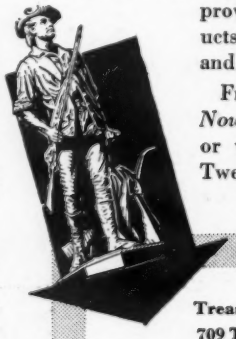
No chore at all. The system is so simple that A. T. & T. uses exactly the same easy card system that is being used by hundreds of companies having fewer than 25 employees! It is simple enough to be handled by a check-mark on a card each pay day.

Plenty of help available. Although this is *your* plan when you put it into effect, the Treasury Department is ready and willing to give you all kinds of help. Local civilian committees in 48 States are set up to have experienced men work with you just as much as you want them to, and no more.

Truly, about all *you* have to do is to indicate your willingness to get your organization started. We will supply most of the necessary material, and no end of help.

The first step is to take a closer look. Sending in the coupon in no way obligates you to install the Plan. It will simply give you a chance to scrutinize the available material and see what other companies are already doing. It will bring you samples of literature explaining the benefits to employees and describing the various denominations of Defense Savings Bonds that can be purchased through the Plan.

Sending the coupon does nothing more than signify that you are anxious to do *something* to help keep your people off relief when defense production sloughs off; *something* to enable *all* wage earners to participate in financing Defense; *something* to provide tomorrow's buying power for your products; *something* to get money *right now* for guns and tanks and planes and ships.



France left it to "hit-or-miss" . . . and *missed*. *Now* is the time for *you* to act! Mail the coupon or write Treasury Department, Section A, 709 Twelfth St. NW., Washington, D. C.

FREE - NO OBLIGATION

Treasury Department, Section A,
709 Twelfth St. NW., Washington, D. C.

Please send me the free kit of material being used by companies that have installed the Voluntary Defense Savings Pay-Roll Allotment Plan.

Name _____

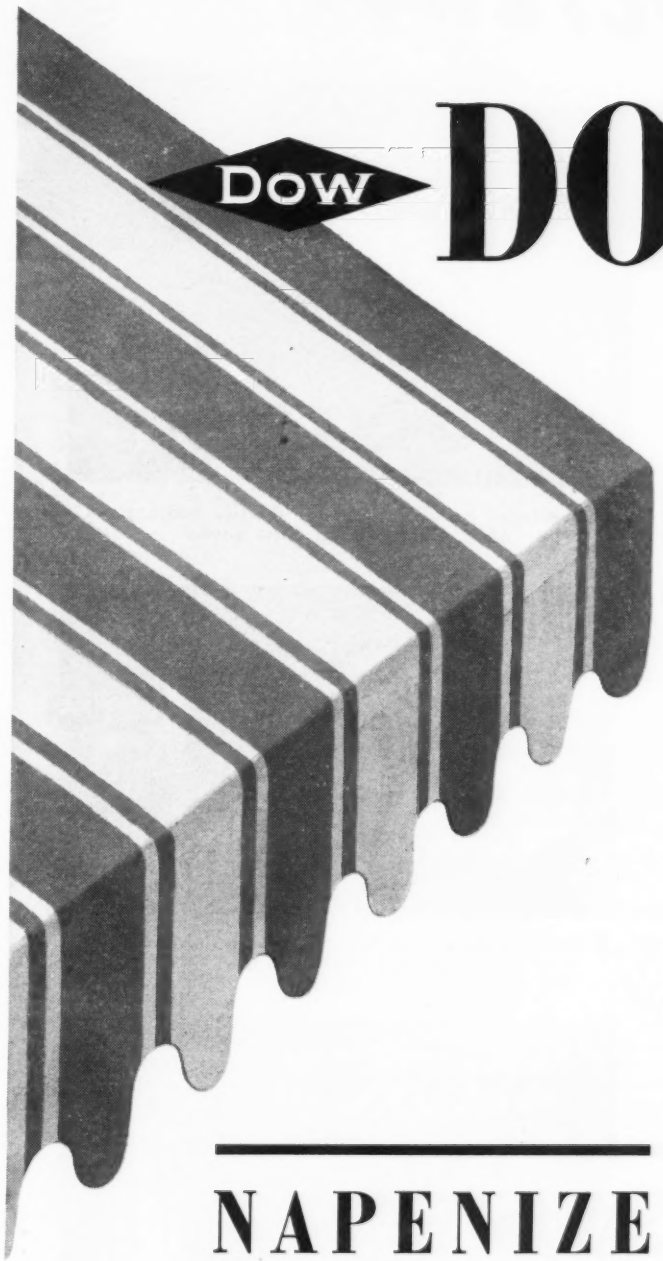
Position _____

Company _____

Address _____

GPO 428498

FOR THE PREVENTION OF MOLD GROWTH ON AWNING STRIPES



DOW DOWICIDE VI

DOWICIDES* ARE FINDING important application as an effective means of preventing mold growth in paints. When Dowicide-treated paints are applied to cloth it may be expected that the stripes will be mold resistant and some degree of mold resistance imparted to the cloth itself. This protection is the result of the fungistatic action of the Dowicide VI.

Briefly defined, Dowicides are a group of phenolic derivatives which have proven their effectiveness in controlling a wide variety of micro-organisms. Even in atmospheres of high humidity they are thorough and dependable in inhibiting mold growth—thus preserving beauty and life of the awning cloth.

The low cost and complete effectiveness of Dowicides have earned the approval of the awning industry. For complete information on this application of Dowicide VI, write to the Dowicide Division.

NAPENIZE

The Positive Anti-Mildew Treatment

NAPENIZE is the name given to a new anti-mildew treatment that assures canvas products a greater degree of protection than has been commonly attainable. The physical affinity of the chemical compound for the cloth makes this possible—resulting in longer life for the product. No waterproofing is required to retain the effectiveness of the treatment. NAPENIZE is simple and inexpensive. It provides more effective protection for canvas materials with a minimum loss of tensile strength.

*Trade Mark Reg. U. S. Pat. Off.

THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN

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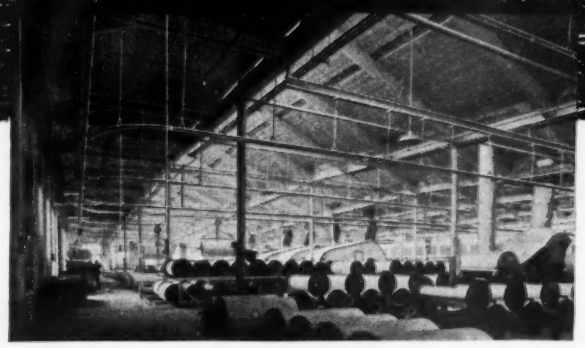
The Keynote of Manufacturing Today is EFFICIENCY

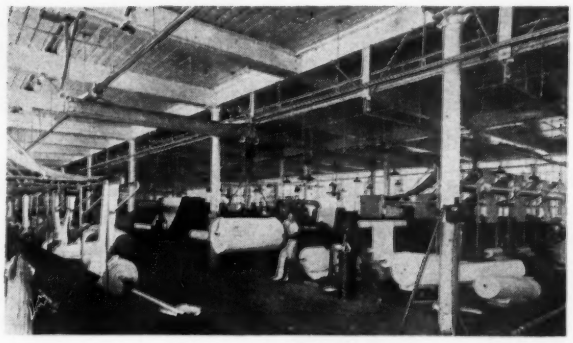
AMERICAN MONORAIL

OVERHEAD HANDLING EQUIPMENT

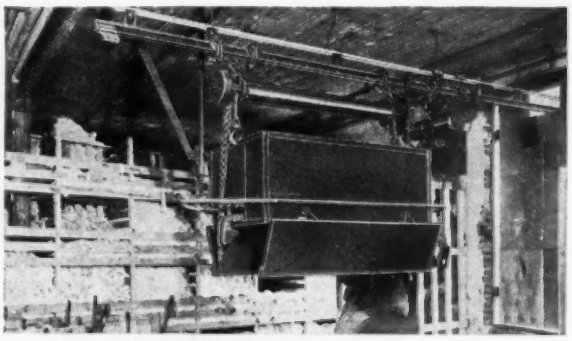


★ Overhead handling in the slasher room pays big dividends in time saved.

WASTE is out . . . in time, materials and man power. American Mono-Rail Overhead Handling Equipment has proven to hundreds of manufacturers to be the real answer to materials handling efficiency. Regardless of the type of business, there is a system suited to your problems. If you have a difficult or a costly handling operation, why not let an American MonoRail Engineer suggest a solution. Many times our engineers have solved problems that others claim "can't be done." Definite recommendations will be made and a detailed plan submitted showing just how an American MonoRail system can carry your product at the lowest possible cost and the highest possible efficiency. This service is without cost or obligation. Write us today.



★ Rolls of cloth pass from finishing to inspection without re-handling.



★ Automatic carrier transfers grey stock between mill and storage.

Write for copy of "Blue Book" showing hundreds of illustrations.

THE AMERICAN MONORAIL CO.

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JANUARY, 1942
Volume 106 Number 1

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SERVING THE
Textile Industries

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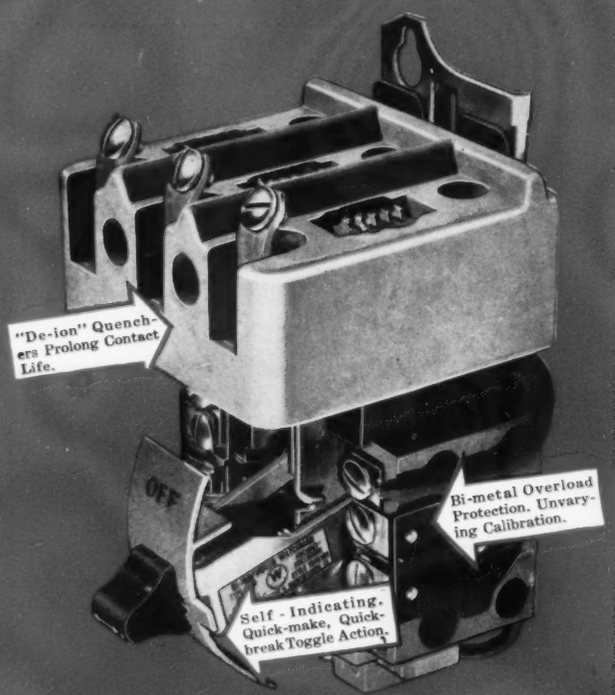
IT'S EASY TO see

"ON" "TRIPPED" "OFF"


"De-ion" Quenchers Prolong Contact Life.
Bi-metal Overload Protection. Unvarying Calibration.
Self-Indicating. Quick-make, Quick-break Toggle Action.
OFF

WITH THE WESTINGHOUSE LOOM SWITCH MANUAL MOTOR STARTER

For Motors Up to 7½ HP
Class 10-100

Easy to Install

Compact design but with ample wiring space. Concentric knockouts on top, bottom, sides and back make installation easy. Top screw holes in back of cabinet are keyhole-shaped. Bottom holes oblong for quick lining up. Straight-through wiring—line to top —load at bottom.

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"De-ion" quenchers prolong contact life. Bi-metal provides unvarying accurate overload protection. Trip-free switch—cannot be held closed against overload. Quick-make, quick-break prevents "teasing". All metal parts tinned or cadmium-plated. Silver-to-silver, double break contacts. Deep-drawn cover and contact inspection window on arc quencher make maintenance easy.

Westinghouse Electric & Mfg. Co.
East Pittsburgh, Pa.

J-21161

Westinghouse

"DE-ION" LOOM SWITCH

W WESTINGHOUSE ELECTRIC

Grease Sealed IN

---lint sealed OUT

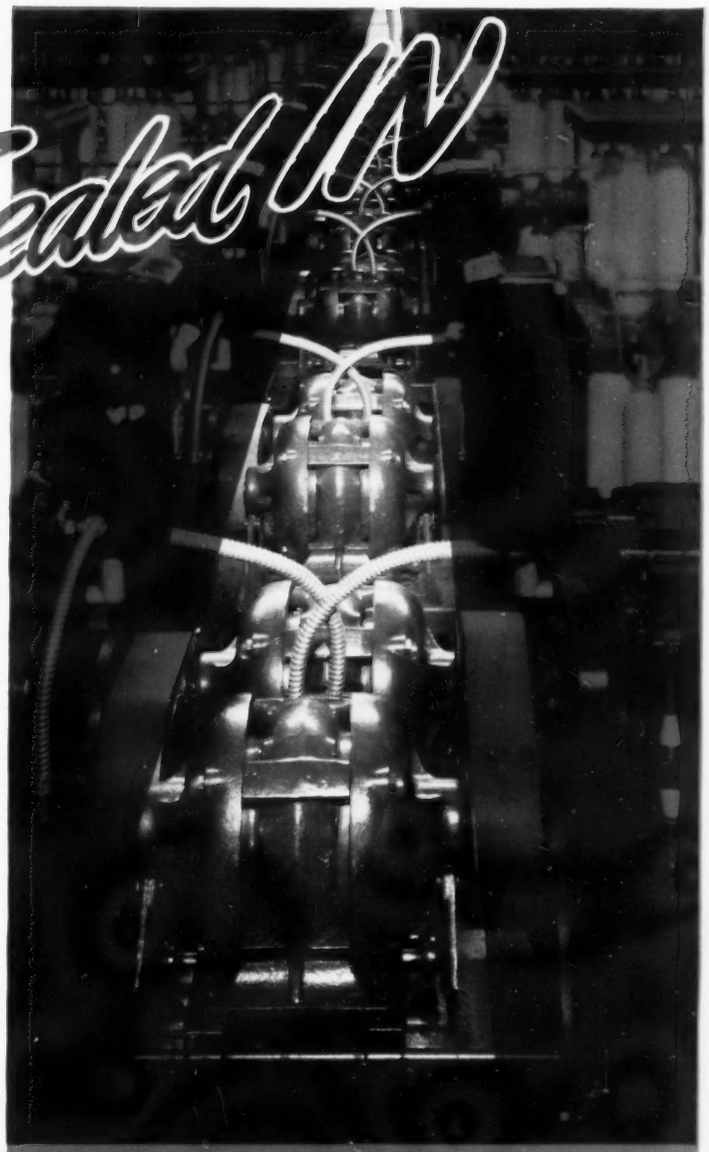
WESTINGHOUSE LINT-FREE MOTORS WITH SEALED BALL BEARINGS SAVE TIME AND SHUTDOWNS

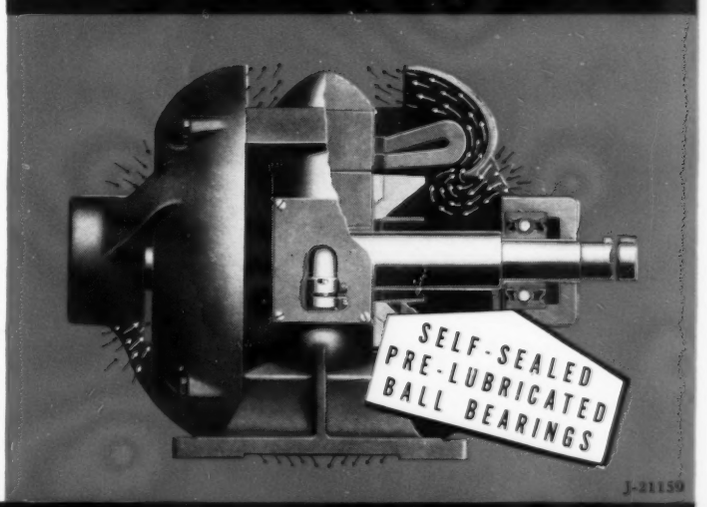
Grease can't get out — lint can't get in — with the self-sealed ball bearings on Westinghouse Lint-Free Motors. Factory prelubrication eliminates need for month-to-month lubrication and possible over-greasing.

MOTORS STAY CLEAN

Lint-free operation is assured by carefully contoured air passages. Lint goes in, through and out. Highly finished, streamlined windings and internal surfaces offer no opportunity for lint to accumulate and clog motor. Bearing housings are smooth with no projections to catch lint or obstruct air flow.

Westinghouse Lint-Free Textile Motors are designed for individual drives on pickers, roving frames, winders and spinning and twisting frames. Write today for folder DD-3175. Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., Dept. 7-N.





J-21150

Note the large, unobstructed air passages, and the compact construction of the sealed ball bearings in Westinghouse Lint-Free Motors. Westinghouse engineers have taken advantage of every construction detail to make this the cleanest running textile motor available.

Westinghouse
LINT-FREE MOTORS

COPRANTINE
★ YELLOW GRLL ★
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★ BORDEAUX BGL ★

COPRANTINE
★ BROWN 5RLL ★
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★ ★ BLUE GLL ★ ★
★ ★ BLUE RLL ★ ★

COPRANTINE
★ ★ GREY GGL ★ ★
★ ★ GREY RRLL ★ ★

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FOR YOUR DEFENSE!

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Fast to Light and Washing

BESIDES this unusual combination of both light and wash fastness, Coprantines have another interesting feature. They show marked stability to the effects of the crease proofing process. The shade change is negligible in most cases, while the light fastness which usually suffers severely, is hardly affected.

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SHORTS AND REMNANTS

"O. K., If That's What You Want!"

One Sunday, a few weeks ago, a startled American nation woke up to the fact that the Japanese had taken matters in their own hands and not only declared war upon the U. S., but carried the attack to us with a devastating aerial attack upon our Pacific islands.

After a few days of reverberations, with air raid alarms on both the West and East Coasts, and formal declarations by Germany and Italy against the United States with return declarations on our part, the majority of the country settled down to a realization that it was just as well to have it come this way. And most of us waked up to the fact that we had been pretty well into the affair already. Further, an attack by Japan, whether or not instigated by her partners, solved a lot of questions and debates and brought a unity and determination to the nation that would have been difficult to achieve otherwise.

At the time this is being written, there has been little talk of "meatless days," "wheatless days," "lightless days," and few of the flag-waving rallies that marked the last war. Perhaps this is just as well. There is little of the glamour or romance left in modern warfare. It is now a battle of man-made machines on land and sea and in the air, rather than a battle of manpower itself. The War Between the States was probably the last romantic war in which the thrill of a gray wave charging up the hill at Gettysburg, with Pickett's flags afurl, lies with the dead past.

War today is a grim reality in which fear, suspense and futility may play a greater part than cannons. Perhaps, then, it is just as well that a nation at war calmly roll its sleeves up and say "O. K., if that's what you want, we'll give it to you."

"Old-Timer" and Third Shift

Comments and requests keep coming in for the offer that "OLD-TIMER" made in an obscure paragraph of his September article, of a solution to third-shift supervision. Recent requests and comments on this material include A. T. Branigan, assistant superintendent, The American Thread Company, Fall River, Mass.; W. D. Smith, plant superintendent, Ashland Corp., Jewett City, Conn.; R. P. Hardeman, superintendent, grey mill, The Trion Company, Trion, Ga.; J. J. Scott, president, Scottdale Mills, Scottdale, Ga.; W. V. Boyd, superintendent, Canadian Cottons, Ltd., Montreal, Canada; J. M. Gayle, superintendent, Ross Fabrics, Inc., Morganton, N. C.; and Chas. C. Holmes, superintendent, Continental Mills, Lewiston, Maine.

As one of our friends writes—"'OLD-TIMER' has some pretty good ideas in this information—some of them which we are practicing and some which we are not. They are all worth consideration . . ."

◆

Tubular Knit Material

"We desire cotton tubular knit material . . . to be used in making gym shirts, commonly known as sleeveless and T-shirts. We wish to buy material in yardage and do the cutting, sewing and finishing here."

W. G. TAFT
Sportcraft Knitting & Mfg. Co.
Seattle, Washington

◆

"One of the Best"

"We consider COTTON one of the best trade journals for the textile trade, especially for an item which we wish to be called to the attention of the cotton mill executives."

D. R. DICKSON
Mgr., Greenville Textile Supply Co.
Greenville, S. C.

◆

Useful Information

Another comment on the slashing and weaving discussion carried in the October issue states "We are always glad to get your reports and find in them a lot of useful information to help us work out some of our problems, as well as keep up with what other mills are doing."

GEORGE R. KAY
Gen. Supt., Spindale Mills, Inc.
Spindale, N. C.

◆

More Discussion Meetings

Commenting on the round-table discussion on dyeing, bleaching and finishing held at a fall meeting of the A. A. T. C. C. Southeastern Section, and reported in October COTTON, J. F. Byrd, of Marshall Field & Co., Leaksville, N. C., writes "Personally, I feel that if more discussions of this nature of the sectional meeting of the A. A. T. C. C. were held, that a great deal more would be accomplished, and that eventually the entire association membership would be drawn much closer together, not only from a business standpoint, but from a friendship standpoint as well."

◆

Read Every Page

"All of us here like to read and do read every page of COTTON . . ."

H. H. HUGHES
Supt., Swift Mfg. Co.
Columbus, Ga.

We pass along the following notice, seen at the entrance to the purchasing department of one of our neighbors, and recommend the idea to others:

> We believe that every salesman, no matter whom he represents, is offering a service that may prove valuable and is therefore deserving of a courteous audience.
>
> We want to serve you promptly, courteously and effectively. We don't like to be kept waiting ourselves.
>
> Please do not hesitate to ask how long it will be before you can see your man, or to ask a second time when necessary.
>
> We want you to feel that this window is a co-operation, not a defense.
>
> FULTON BAG & COTTON MILLS
> B. J. Kane, Purchasing Agent.

Maintenance Important in February Annual Issue

In the annual Modernization and Maintenance issue to be published in February, COTTON again comes to the front with a thorough series on textile-mill maintenance, which will answer the needs of mill men throughout the industry. Textiles, as a basic industry, supplying clothing, bedding, parachutes, tents, etc., for our armed forces as well as essential clothing for civilian demands, will continue to play an important part in our war effort. OPM has indicated that essential production will be maintained as high as possible without taking primary war materials away from Army and Navy uses, with particular emphasis on maintenance and repair and replacement of worn essential machinery.

COTTON has aided and assisted both mills and machinery and equipment manufacturers supplying the mills in every way possible in the switch-over from peace-time to war-time production. Starting with October 1940, when the first over-all picture of "Textiles in National Defense" was presented and continuing on down to the present, including the passing on of information to both readers and advertisers on developments in Washington affecting them, we have tried to review the shifting scene as carefully as possible from a textile manufacting and production angle.

The February Annual Modernization and Maintenance Number will be geared to present textile thinkings, with emphasis on maintenance and the presentation of current outstanding modernization programs for the mills who are looking forward to the future. Advertisers should reserve space by January 24.

◆

"Package Yarn Dyeing"

". . . This article is the first real one I have ever read on package dyeing."

G. H. HACKER
Vice-President
Gaston County Dyeing Machine Co.
Stanley, N. C.

◆

Praise for Editorials

"Please give us permission to ask the Greenville Observer to reprint your editorial in the November issue entitled 'Shall We Finish the Auditorium—or Help Win the War?' This is a very timely and impressive statement of present conditions."

W. G. SIRRINE
Pres., Textile Hall Corp.
Greenville, S. C.

Praise for COTTON'S editorials in recent months has come from far and near and has included congratulations from the knitting trade as well as other mills previously mentioned, with comments from R. P. Shapard, Jr., president, Spalding Knitting Mills, Griffin, Ga.; Benj. Russell, president, The Russell Mfg. Co., Alexander City, Ala.; A. H. Carr, president, Durham Hosiery Mills, Durham, N. C.; R. A. Spaugh, Jr., vice-president, Washington Mills, Winston-Salem, N. C.; E. W. McMillin, vice-president, Richmond Hosiery Mills, Rossville, Ga.; T. R. Durham, executive secretary, Southern Hosiery Manufacturers Association, Charlotte, N. C.; and others.

Nothing's Important But Winning The War

Winning the War against Japan and her unholy partners is the most important thing in the world for the people of America. In fact, in comparison with that task, nothing else is important at all.

Textile mill operators face many difficulties, including higher taxes, higher wage rates, higher raw material and maintenance costs. But not higher power rates.

We face higher taxes, higher wage rates, higher costs of materials and supplies. In addition, we have fixed rates.

However, the problems of business are no longer of primary concern. The main thing is to keep up production, both of War orders and civilian goods. The faster we produce, the quicker will we win the war.

In the matter of production, this Company and its customers are in the War together, side by side. We will not fail to do our part.

GEORGIA POWER COMPANY

COTTON
Textile Industries

Vol. 106 January 1942 No. 1

Now, We Either Go to Work —or Else Lose the War

WE HAVE now entered the shooting department of this war, and in a manner which has unified public opinion as it has perhaps never been unified before. When a war is literally dumped in your lap there can be no doubt about what to do with it. Of course, we have actually been in the war in a limited way ever since we began our Lease-Lend Program, but a great many Americans refused to believe that we were really in it, and millions of sincere citizens honestly believed that we were not in, and could keep out. Lots of people believed that we could continue business as usual, and while there was some public talk from time to time about sacrifices and privations, these seemed to be chiefly a figure of speech, and to all appearances, as far as the eye could reach, there was a vast and increasing prosperity engendered by the lavish expenditures of the Government.

In two weeks all of this seems to be changed, and the American people are beginning to realize something of the task ahead and of the labor and privation and sacrifice necessary to bring this task to the only conclusion we are willing to consider. From here on, all American industry must be geared to the production of the maximum quantity of military equipment, and in this transition from a part-war economy to a full-war economy there will be many terrible dislocations in industry.

FORTUNATELY for the textile industry it should experience relatively little dislocation. Its equipment cannot be converted to any other uses, and therefore while certain textile establishments may have to close up for the duration, most of them will undoubtedly continue on a full-time and overtime basis, since the Army and Navy must be clothed and provided with innumerable textile products, and a people deprived of the opportunity to buy so many things they customarily require will still need clothing and household goods, and should undoubtedly be afforded the opportunity to have these things which are principally manufactured from surplus domestic farm products.

We are entering this war unusually well provided with food and cotton, and there seems little reason to think that there will be any curtailment whatever in the activities of the cotton-textile industry. It consumes too trivial a quantity of the really scarce materials to warrant depriving it of the means to continue full-time production.

The woolen industry must provide clothing and blankets for the Army and Navy, which is a pretty good-sized job in itself the way these things are used up in wartime. The silk industry is of course hardest hit of all, but perhaps synthetic fibers will replace most of the silk consumption.

ONE PROBLEM the textile industry may soon face will be a serious shortage of labor. There is current talk of an Army of three million men, which means another million and a half men taken out of productive work to take up a business which will require the productive energies of five or six million workers to provide supplies. This problem will not rest on the textile industry alone, but on all industries except those strictly engaged in civilian pursuits which are not considered necessary in time of war. Even such businesses will frequently be converted to some sort of wartime production, and where such conversion is impossible, the jobless workman can undoubtedly find plenty to do at some other employment.

This brings up the "Guns or Butter" question that has been posed for the people of Europe and England. What everybody wants to know is, "What have we got to do without?" Is there any way to get our guns and have enough butter too? We believe that there is, and we have mentioned it before, but it has previously not been a popular thing to mention. It was the simple expedient of going to work, which is something that has not appealed to the majority of Americans for a good many years. We have mentioned before that if a man is engaged in making butter or automobiles or radios and working at it 40 hours a week, he can put in at least 10 hours a week making guns without diminishing whatever the supply of butter, automobiles and radios. By merely lengthening the hours of work to 50 hours a week instead of 40, every fifth man in industry can be put to work on military production without costing the nation a dime in the reduction of its standard of living. We believe that this is the way, and

the only way, that the people can have both their guns and their butter.

There has been a good deal of overtime work this year, and millions of men have put in 50 or 60 or more hours per week, but they have all been paid at overtime rates for it as required by law, and that is not only gutting the Treasury, but is fostering inflation. The only way to have the butter and get the guns for nothing is to do the gun making on overtime with no pay whatever.

We have felt for the past year that the 40-hour week should be abandoned, and that at least a 48-hour week should obtain, and that as more production was required, the work week should be lengthened correspondingly. At the same time, we felt that it was necessary to freeze the prices of everything, including wages and farm products. With such action must necessarily go a prohibitive excess profits tax, to keep employers of labor from unduly profiting by reduced costs from longer hours at the same wages. The manufacturer could then take his choice between lowering prices, and thereby benefiting the entire public, or paying all of his profit from high prices into the Federal Treasury to help pay the cost of the war and to help keep down inflation.

THIS WAR is going to be won by an avalanche of manufactured military equipment, and an avalanche of sufficient proportions cannot get under way with a 40-hour week. We can't win this war with appropriations unless we get value received from their expenditure. Squandered billions will not defeat an enemy who is willing to out-work and out-produce us. The United States is the greatest producing organism in the world. It can, in a pinch, produce more of almost anything than all the rest of the world put together, and it has probably got to do this very thing in order to win this war, but it can only do it by hard work, and by warding off inflation, which can only be done by hard work.

At this time, inflation is our worst enemy, and the one from whom we have the most to fear, and the only remedy for inflation is more production. Freezing prices alone is not sufficient. If things become very scarce they will be bootlegged if their prices are frozen. If things can be kept reasonably plentiful, their prices can be controlled, and the public will co-operate in controlling them. If we can control inflation, there is nothing to fear. Surely, this country, with its fabulous capacity for producing things, can make the ships and the guns and the planes to slap down the presumptuous tyrants who are now trying to enslave the world, and to slap them down so they will stay slapped. If we get licked it will be because we licked ourselves, and now is the time to be taking stock of our resources and potentialities, and going loyally to work to make the most of our opportunities. It is not a time to be thinking in terms of big profits or fancy wages or closed shops, but a time for universal dedication to the fixed and unalterable determination to put out whatever it takes to win this war.

Cotton-Textile Production at All-Time High

All-time high production of cotton-textiles for the year 1941 has already been attained in the first 10 months' operations, and may exceed 11,500,000,000 square yards of cloth for the full year, according to a report to members of The Association of Cotton Textile Merchants, issued by W. Ray Bell, President of the Association. The report states that this estimated production for the year would be an increase of 20 per cent over the previous record year (1940), and of 27 per cent over 1939, the last full pre-defense year.

This record production has been achieved by the industry in its efforts to meet the demands made upon it by the defense program. Commenting on the figures, Mr. Bell expressed the opinion that discussion of certain shortages, both in the trade and in the press, has neglected to give due credit to the unprecedented production record of the industry.

"The demands of the defense program have necessarily caused dislocations in some types of civilian production and shortages in others," he said, "but the present huge production is graphic testimony to the extent to which the industry has succeeded in turning to 3-shift production. As a whole, operations of active machinery averaged 132.5 per cent of 2-shift production during October, a record which would have been practically inconceivable a year ago. Active spindleage in the states of Tennessee and South Carolina during October averaged but slightly under a full 3-shift run. Not far behind were the operations in Alabama and Georgia.

"The public, largely unfamiliar with textile mill operation, may not readily appreciate the difficulties which stand in the way of accomplishing and maintaining full 3-shift production. Among these, however, is inadequacy of the complement of machinery at many mills for a balanced 24-hour operation. A great many of the cotton mills are located in areas which cannot furnish enough labor for 3 shifts.

"Overtime is also a problem: it includes Saturday operation, which is legally all overtime. 50 per cent over regular labor rates must be paid for overtime work. Nevertheless, there is a large and increasing amount of overtime operation throughout the industry."

The report states that cotton consumption for ten months totaled 8,838,000 bales, or approximately 10 per cent more than for the entire twelve months of 1940, which was an all-time peak. Mill operations for the ten months amounted to 101,331,000,000 active spindle hours, which compare with 98,184,000,000 hours for twelve months of last year.

In the Association's calculations, these Census figures of cotton consumption and mill operations represent an over-all production of cotton-textiles approximating 9,891,000,000 square yards, exceeding all of 1940 by 300,000,000 square yards. With November and December production still to be added, Mr. Bell prophesied that the final figures for the year would approach the grand total of 11½ billion square yards, making a gain of 2 billion square yards over the previous peak of 1940.

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Anderson Heads South Central AATCC Section

Jack Anderson of Peerless Woolen Mills, Rossville, Ga., has been elected chairman of the South Central section of the American Association of Textile Chemists and Colorists, succeeding Fletcher L. Kibler of United Hosiery Mills Corporation, Chattanooga. Other officers are William J. Harrison, Trion (Ga.) Company, vice-chairman; Joe T. Bohannon, American Aniline Products, Inc., Chattanooga, treasurer; J. D. Mosheim, Crystal Springs Bleachery, Chickamauga, Ga., councilor to national association.

Reaping Ideas from the Field

A review of a year's trial with a modern suggestion system

By Truman Robinson

MR. A. AVERAGE MANN, employee at the Swift Manufacturing Company, Columbus, Ga., is taking a keener interest in the progressiveness of his company. As a typical employee he is placing more ideas before the company officials for their consideration than ever before—ideas about plant operations, about new or improved methods, and about scores of other subjects that help the company, the employee, and the customer, and create better relations between the three.

All of this has come about by the establishment of a "Suggestion System" at the mill that stimulates constructive thinking on the job, and to some extent gives every employee a degree of executive participation in the company, plus a cash award in ratio to the usefulness of his suggestion—providing, of course, that the suggestion merits acceptance.

The adoption by the company of the "Suggestion System" didn't just happen. It was adopted and installed only after careful consideration of its worth, and after being reasonably assured that the system would impel constructive thoughts among the employees and motivate improvements of importance to all.

The first step, after deciding favorably on the system, was to sell the idea to the overseers, the supervisors, and the employees, and to let every employee know that his or her foreman had no resentment against their participation; instead ideas were welcomed from all and along lines of which the suggestor thought best, regardless of where the hammer fell. The foremen were ready and willing to help a man work out his idea so that it might be intelligently submitted.

With these thoughts in mind, the company officials adopted, on May 2, 1940, regulations to govern the suggestion system. It was a seven-point program drawn up with understandable rules that would safely guide the system onward through the years and offset any misunderstandings that might later turn up. Copies of the regulations were given to all department supervisors that they might thoroughly familiarize themselves with the project from the very beginning and would be instrumental in helping their employees better understand what the system was all about. The regulations adopted are here briefly outlined:

1. The Suggestion Committee will consist of the Superintendent, Assistant Superintendent (Chairman), Treasurer, Overseer of the department from which the suggestion being considered originated, and the Master Mechanic (if the suggestion being considered requires a machinist's or mechanical engineer's experience). The Committee meets semi-monthly, the second and fourth Saturdays at 11:00 o'clock A. M.

2. An adoption to place a suitable bulletin on the bulletin board of every department two weeks prior to the installation of the suggestion boxes in the mill. (This proved to be a very good plan because this method of presenting the plan gave the employees ample time to become familiar with the system and to ask questions about it of which they did not quite understand. During these two weeks every worker became enthused over the system and felt that they understood a great deal of how it was going to work before the boxes were actually installed.) The overseers were asked to carefully explain individually or collectively the suggestion system, the methods and the amounts of awards, the delays in decisions that might happen, the advantage to an individual of having an idea or ideas accepted and not to be discouraged if a suggestion was unacceptable.

3. This point in the suggestion system regulations gave the locations throughout the mill where the suggestion boxes were to be placed. Their locations were designated as being one each in the two main parts of the mill and two conveniently placed on the outside—protected from the weather—prominently near the north and west entrances to the mill. An employee doesn't mind being seen dropping a suggestion in the boxes, so the boxes occupy front line positions, flanked by striking posters that are changed regularly, and are equipped with an ample supply of suggestion blanks to make their use as easy as possible. This all

The suggestion box being used by two of the operatives in the mill.

helps to sell the plan to the employees.

4. Prize awards were designated to be not less than $1.00 and to range upwards in ratio to the value of the suggestion.

5. Department Heads, Overseers, Superintendent, Supervisors, Office Personnel, Second Hands, and members of the Designing Department are not eligible for awards for suggestions pertaining to anything within the scope of their daily activities—since suggestions from such persons are part of their obligations to the management. They are, however, eligible for cash awards for accepted suggestions outside the scope of their positions. All other employees are eligible to participate in the suggestion awards.

6. Complete minutes of every Committee Meeting are kept by the chairman.

7. The chairman has supervision of changing the suggestion box bulletins each week, and twice each month—immediately before the Committee Meeting—the chairman collects the suggestions from each box, and the superintendent advises all suggestors if their ideas are or are not acceptable.

In addition to each overseer having explained to him just how the suggestion system was to be regulated, he received a more detailed account on July 19, 1940, in which he was shown how to properly answer any question that the people might ask. Attached to this was a copy of the letter which was to be released later individually to every employee, also a sample form of what the suggestion blanks would be like. By this time the system was thoroughly understood by all overseers and the suggestion plan was off to a good start.

Selling the Employees

The next step was to concentrate attention directly to the employees and sell them on the idea of the plan. This was ably done by passing out to them a letter that thoroughly explained the system, its operation, its method of judging suggestions, the location of the boxes. Attention was called to the many phases of the business upon which suggestions could be made—elimination of any accident or fire hazard, processes of manufacture, elimination of waste, transfer of cotton yarn or cloth in the mill, new attachments to the machinery, etc. It especially called attention to the many opportunities for changes or improvements, practical ways that might result in the saving of time, materials, or in improving the present methods. The employee was shown that the plan works with absolute fairness, that the judgment board was composed in part by men down the line, and was explained the ratio of awards. Attached to each employee's letter was a sample suggestion blank showing how the suggestion form was numbered to correspond with the number on the stub, which is detached and saved by the suggestor until he learns the outcome of his suggestion.

The committee considers suggestions offered by mill employees.

Now that the key men and the employees all understood the plan, the system was put into effect with the installation of the suggestion boxes. Now was the time to see what the future held for the suggestion system. Would it prove successful? Everything was up to the employees—would they respond?

For answer to this, a review was recently made to determine what had been accomplished during the first year and two months that the system has been in operation. The results of this review speak for themselves:

A total of 287 suggestions have been deposited in the suggestion boxes. These suggestions were carefully considered by the Committee and 54 of them merited a cash award ranging from $1.00 to $25.00. Nearly 5½ per cent of the suggestors were rewarded with cash.

In reviewing the suggestions themselves, one is inclined to group them in three classes: Very Good—timely suggestions that concern ideas beneficial to the progressive development of the company, the employee, and the customer, and backed by constructive thought; Good, but not acceptable—this type includes those suggestions that are not timely, changes that have already been considered or are now in the course of being put in motion, cannot be worked out at all or the cost of putting the suggestion into operation would be prohibitive, etc. The third type of suggestion cannot easily be described except to say they are "silly." It is to be borne in mind that there are always those in every plant who "leap into a suggestion before they look at the idea from an intelligent standpoint."

Among the 287 suggestions, every form of idea was advanced, from "streamlining the dope wagon" to the installation of ultra-modern, electric-eye equipment.

Of course, both types of this extremity were in the 233 rejects. Fortunately, however, most of the suggestions have much merit and are submitted with all sincerity.

So sincere and so good were 54 of the suggestions that over $150 has been awarded to suggestors.

In considering the amounts of the awards, it should be borne in mind that practically every suggestion had an intangible value and could not be figured by the

company from a dollar and cents standpoint.

Some suggestions, however, prove, as time goes on, to be worth more to the company's interest than was first decided at the time an award was made; then the suggestor receives additional awards as an extra bonus for his idea.

Some Winning Suggestions

What ideas are advanced by the suggestors? What subjects do the suggestions concern? Three suggestions are picked at random from the suggestions that have been accepted to show the variety of subjects concerned when ideas are advanced through the suggestion system:

An employee in the Mechanical Department received $3.00 for the following suggestion: "We are having too many busted cots in the spinning rooms. I suggest a new cement heater with regulated temperature." The Master Mechanic concurred with the suggestor that this was a good idea, and the Suggestion Committee voted to make the suggestor $3.00 richer.

Number A-275139 originated in the Number 1 Weaving Department and offered the following suggestion: "On C & K looms in the No. 1 Weave Room to stop quills from falling on the floor in place of in can, that we cut out end of quill chute and place small guard over end of same. I believe the adoption of this suggestion will accomplish the purpose, as it is a nuisance and a danger to have quills on the floor, also it is an expense." $2.00 was awarded for this suggestion, although the idea prompted did not correct the trouble. Many suggestions on this subject alone have been received, and nearly $50.00 in awards has been given the suggestors of suitable ideas in trying to eliminate quills being thrown from the loom onto the floor instead of in the quill cans. The trouble has not yet been corrected, but improvement is noted.

Three dollars went to D-152970 for the following suggestion: "I suggest that we ask our people (employees) when purchasing seat covers for their cars to demand covers made from Swift Manufacturing Company material. I left my car at a local place of business some days ago and when I called for it later they had covers made by an out-of-town company. I promptly refused to accept them and asked for our own goods and got them. The clerk said I was the first man to demand Columbus made covers. Let's advertise among ourselves. It pays."

From these three suggestions, it can readily be seen that from the hundreds of ideas submitted during a year, some will be on practically every subject concerning the welfare of the company.

Occasionally several months are required to determine the feasibility of a plan offered through the suggestion system. An idea of this type was suggested several months ago and concerned bunch builders. Since the suggestion was received, the company has had considerable correspondence with the manufacturers along this line. Today, the two are still working on the experiment in the hopes that the idea can be put into practice. The suggestor of this idea may yet be a recipient of a cash award.

There have been many instances where a suggestor was given an encouragement award; although the idea suggested was not placed into practice. This is not common, but some cases warrant this procedure.

The first three persons, a lady and two men, to be awarded cash for their suggestions were honored with lengthy article, which also pictured the three, on the Textile Page of the Columbus *Ledger-Enquirer*.

Since that time 51 other employees have stopped by the paymaster's office to receive an award check in payment for their suggested ideas. Suggestions are still being received at the rate of 6 weekly. From these 312 suggestions that will be received during the next year there will be many more to receive awards.

The 233 persons whose suggestions were rejected were written a personal note by the superintendent, explaining why the suggestion was not accepted. They were extended thanks for offering the suggestions, however and were asked to submit more ideas. Those suggestions which looked promising were submitted to the department heads of the department concerned in the suggestion, and the suggestor was notified that his suggestion was pending additional consideration and that he would be notified of the suggestion's final disposition.

Most of the correspondence regarding the acceptance, pending further action or rejection of suggestions, is done through numbers, because the suggestion blanks are numbered and are not signed by the suggestor. He retains the stub which has a corresponding number to the blank, and if his idea is accepted or if the committee wishes to go into further detail regarding the suggestor's idea, then that number is posted on the bulletin boards over the different suggestion boxes and the holder of that stub is advised to stop by the superintendent's office relative to the suggestion or go by the paymaster's office and present the stub in exchange for a check which has been awarded for his accepted suggestion.

After a year's trial, the idea is gaining momentum with the employees. Suggestions are coming in from all three shifts, from men and women, and from every department. Some are still silly; some are still not so very good; but, fortunately, most of them are constructive ideas that are proving agreeable to the customer, highly beneficial to the company, and helpful in keeping the mill running full time.

"How to Train Shop Workers"

American Technical Society, Chicago, Ill., has published a 126-page book entitled "How to Train Shop Workers", which is a revised edition of material formerly carried in a foreman training manual prepared by the National Youth Administration. It serves as a shop training manual for use by foremen and instructors in the training of workers in production and service jobs, and may also be of value to instructors in vocational training schools. The manual deals primarily with the training of learners in efficient habits of work and workmanship, with emphasis placed on the importance of the supervisor and how he may instruct. Material revised by C. A. Prosser of the William Hood Dunwoody Industrial Institute of Minneapolis. Price $1.25.

Management in the Weave Room

By Ira Spitz

ONE OF THE main qualities demanded in an overseer today is leadership. The day has past when the management of a mill selects an overseer for his ability to fix looms, shout loudly and swear fluently. I will not attempt to explain all of the things that have brought about this change, but instead will try to discuss a few things connected with weave room organization and management.

Don't Carry the Whole Load

The most common mistake made by an overseer is to try to carry the whole burden on his own shoulders. Much of this is due to the fact that he is not executive enough to have things done instead of doing them himself. Another, and more prevalent reason is that he is afraid for his assistants to know too much or have too much responsibility for fear of endangering his job. This type of overseer is having a hard time meeting the situation today.

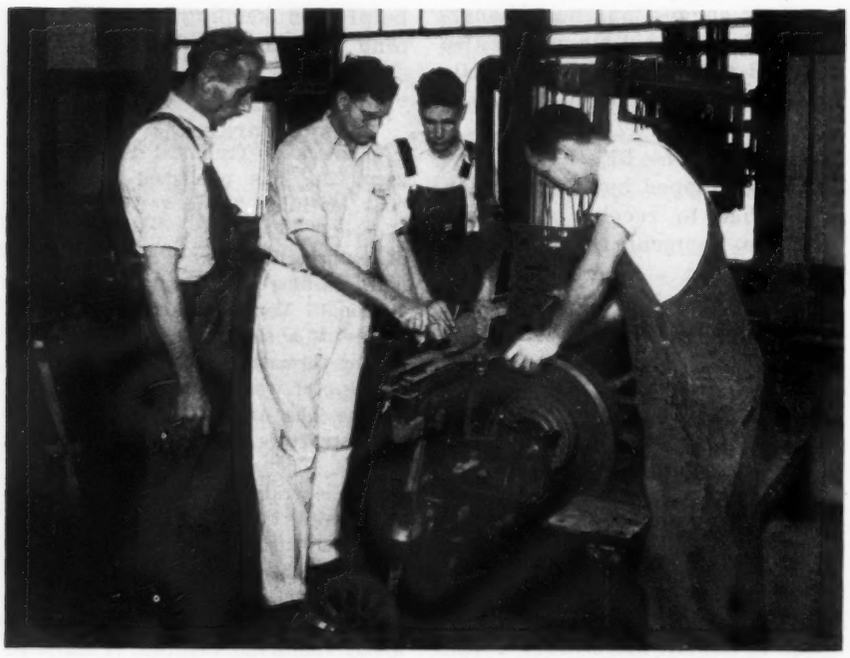
The smart overseer spreads his supervision not only to the secondhands but also to the loom fixers. If supervision stops with the secondhand who has 800 looms, lots of things are going to be passed up on account of his inability to properly supervise each employee and each job on this number of looms. By regarding each section as a unit, with the loom fixer as the head, the supervision is spread to the man who actually works on each loom and is in a better position to know what goes on than either the overseer or secondhand. The argument against this idea is that some loom fixers will take advantage of any authority given them to persecute other employees on their section. This will no doubt be true in a mill that hires every "hobo" loom fixer that comes along, but a mill that believes in training its own help and up-grading within the organization should have no trouble on this score. Supervision should be just as much a part of the training of a prospective loom fixer as setting the harness.

Loom Fixer Supervision

Loom fixers supervision covers every employee working on the section or having the section as part of his job, i. e., the oiler. It should begin of course with the weaver, who can do more to run down a section than anyone else. The greatest menace to a section is the weaver who runs the loom out of fix rather than lose the picks while the loom is being fixed. This can be overcome by the loom fixer explaining that eventually a small job will develop into a big one if the loom is allowed to run. As a rule, nine out of every ten weavers know this already, but are hoping that the big job will come on the other shift.

Then too, there is the weaver who carries a few wrenches in his pocket to do his own fixing. The loom fixer is the one to catch this and stop it by explaining that he is responsible for the fixing on that section and that the mill provides training elsewhere for the weaver who wants to learn to fix looms.

Another employee who ranks along with the weaver in his ability to run down a section is the oiler. By checking one or two looms behind the oiler and calling him back to show him clogged oil holes or holes he has missed will overcome this evil. It is time well spent to remove a bearing to show the oiler that no oil has reached its objective. However, supervision should not stop with these two employees but should go right down to the sweeper, who is very likely to knock the tape harness strap off the roll as he drags out from under the loom.



This mill provides facilities for training employees who wish to learn loom fixing

Fix Loom Before It Is Flagged

There is nothing new about the idea of the ounce of prevention. Most good loom fixers are continually going over their looms checking and repairing things that may cause trouble later on. The fixer who does this usually has fewer flags than the one who only goes to a loom when it is flagged. It is my opinion, and has been my experience, that if this checking and repairing is done according to a fixed schedule instead of a haphazard manner, the overseer will never have to worry about the condition of his looms, his production or his supply cost.

Daily Fixing Schedule

The daily fixing schedule must be made up to fit the individual mill.

In other words, a schedule made up for E-Model Draper looms would not be applicable to X-Model looms or Crompton and Knowles looms. The schedule offered here was made up for E-Model Draper looms of about 1915 vintage. This is a reproduction of the schedule given to each loom fixer to be kept posted in a conspicuous place. It was made up for a mill running three shifts which gives the loom fixer on each shift a third of the looms on the section for which he is responsible for the *up-keep.*

DAILY FIXING SCHEDULE

Loom-fixer—John Doe Looms 1-27

Monday

Check shuttles and pickers

Tuesday

Check front box plate leather
Check binders
Check lay end straps

Wednesday

Check parallel motion
Check picker sticks
Check lug straps and hold up straps
Check the check straps

Thursday

Check filling feelers
Check shuttle feelers
Check batteries

Friday

Check thread cutters
Check temples
Check temple knives
Check every day on all looms:
Warp tension
Filling Feelers

In addition to his daily fixing schedule, each loom fixer should have a schedule of the parts and motions to be checked and repaired when the warp is out. Contrary to the daily fixing schedule, the fixer is to take the looms as the warp comes out and not just on his third of the looms.

FIXING SCHEDULE—WARP OUT

Check sword rocker shaft and bearings
Check let-off whip roll, vibrator cam
Check crank arms, eccentric pins, straps
Check take-up, sandroll, let-back
Check protector motion, frogs
Check harness, springtops, treadle rolls, treadle pins
Check brakes, brake release
Check pick cams, pick balls, pick shaft
Check cam shaft and crankshaft bearings
Check warp stop motion
Check filling stop motion
Check tape selvage motion
Check shipper, belts
Check driving gear, cam shaft gear

Installing New Shuttle

When a new shuttle is put in a loom there are certain things that should be done to the loom to insure normal shuttle life. I have found that by giving the loom fixer this list of jobs to be posted along with his schedule I could get the maximum shuttle life.

NEW SHUTTLE

1. Align lay end plates with race plate
2. Square reed
3. Align back box plate with reed
4. Put on new pickers, binders and iron box plate leather
5. Take power off loom
6. Have loom checked by second-hand

The loom fixer who makes his home in or near the mill village, sends his children to school and becomes a part of the community is vitally interested in keeping his job in the best possible condition. If the mill is lucky enough to have good citizens for loom fixers, all that is necessary to have a good running weave room is intelligent leadership and co-operation on the part of the overseer and second-hands.

If a mill is to work on the system of promotion within its own ranks it must provide means of training employees to promote. Vocational evening classes sponsored by the state and federal governments are excellent means of training help. Certain other mills carry on a training program of their own. It is not the kind of class that is held, but the kind of instruction that is given that matters most. Any good loom fixer can take a class of beginners and teach them how to set up and time each part or motion, but this is not enough. Intelligent instruction should include why these parts are set up as they are, and their relation to other parts and motions.

For instance, out of a class of thirty veteran loom fixers, I found only one who knew the purpose of the vibrator cam, yet each of them knew how to time the cam. The beginner should also be given practice in filing and fitting castings, aligning a loom and the use of gauges. These are things the majority of older loom fixers who came up the hard way do not know how to do well. The other duties and responsibilities of the loom fixer which have already been discussed, should also be included in his training.

Training of Other Employees

The training of weave room help is not limited to loom fixers. It is just as important to train weavers as it is to train fixers and usually the same method is used. Some progressive mills even require a short course of training for each job in the weave room. If this training is not given, the overseer should make a job analysis of each job in the weave room and before a new employee is put on a job, he should have his duties outlined and explained to him. A very good example of this is an experience I had on my first mill job. I was put with an oiler in the card room to learn to oil, and soon learned where every oil hole was and when each was to be oiled. After staying with the oiler a day or so I was put on my own and got along well until a line shaft bearing burnt out. To this day, I feel that it was the fault of the overseer since he had not explained to me that these bearings were supposed to be oiled.

Delegate Authority

The smart overseer then is an executive. The more supervision and responsibility he can pass on to his assistants, the more time he will have to manage the big problems of human relations and machinery. The overseer having the most ambitious secondhands, fixers and weavers is usually the one with the best running weave room. He should not have an assistant that is satisfied to always be an assistant. I still cling to the idea that the overseer who cannot leave his job for a two weeks vacation and find it operating as well as usual on his return, is not running his job to the best possible advantage.

Synthetics: Their Part in Textile Finishing Progress

By Victor A. Schiffer

• For at least a half century, beginning with the unveiling of the base for modern synthetic chemistry, chemists have invaded and transformed one huge industry after another, and although the textile industry did not begin to feel the major effects of the large scale transformation toward synthetics up until about five years ago, textile men today no longer question the use of synthetic products—it is rather a question of which synthetics are best to use for each particular job.

It is no doubt true that our troubled world, with its uncertain conditions and limited sources of various raw materials long used by the industry, has contributed heavily to the revolutionary turn-over toward the domestically-produced synthetic materials, but the belief of many is that future textile historians will consider this contributing factor, to use a chemical term, as a catalyst—a factor which does not actually take part in a reaction, but rather serves to accelerate it.

IN THE MODERN successful textile plant, synthetics are playing, more and more, a larger part in the production of textile products. In some cases, these synthetics are considered inferior, but on the whole, it can be said that synthetics have bolstered the textile industry, making it a producer of superior merchandise at a lower cost to the consumer. Certainly one cannot deny that through the use of synthetics, or the influence they have brought to bear on the older natural substances, the finishing operation has become more of a contributing factor toward the success or failure of a product. It very definitely is more of a basic operation, instead of merely one which has as its purpose the addition of a temporary polish or veneer. This, of course, does not mean that all finishes, finishers, and finishings are contributing beneficially to the welfare of the textile industry, because that certainly is not true. Unfortunately, much finishing being done today serves merely as a cover for inferior merchandise. However, on the other side of the ledger, much more is being done with finishes to enhance the beauty as well as improve the utility of products.

The Resins

The first group of synthetics that usually comes to mind when the subject is discussed is the resins, and perhaps, since this group has made the most important gains, we should discuss them first.

Resins, as many of us know, are not types of substances first known to the modern pioneering chemists, but like most all other of our "new fangled" substances, the idea is merely one copied from Mother Nature herself — given a new twist here and there, and tailor-made to specification. The plastic chemist has found the method for duplicating the resinification process, and with this knowledge sets to work with chosen raw materials which he has found to produce the finished resin having the characteristics desired. This, as compared with natural resins, where Nature produces resins only when the combination of raw materials required happens to be present, is the reason the phrase, "tailor-made to specification", was used.

The fact that these substances can be built to specification leads to the most important sequel: if we can produce raw materials (resins) exactly as we want them, so we can also produce finished goods as we want them. We very definitely have not yet reached that stage of perfection. However, there are already several highly developed types of resins, each presenting many controllable variations such as elasticity, ductility, appearance, and form, as well as resistance to and affinity for many chemicals and their reactions to which textile products are subjected—acids, alkalies, organic solvents, greases, sunlight, water, chlorine etc.

As intimated, the field of synthetic resins has by no means yet reached its limits, for really, the surface has been barely scratched. Yet, more than 25 basic synthetic resin *types* are on the market in appreciable commercial quantities, each of which can, and in some cases is being, applied as finishing materials in the textile industry. True, some of these resins are being prepared directly on the fiber, such as in one type of crush-proofing or crease-resistance operation involving the reaction between urea and formaldehyde. Yet, the resin is there, so we must consider cases of that nature merely as a different method of application.

Types of Resins

Chemically, these more familiar synthetic resins fall into three basic sections or types: the condensation polymers, the linear polymers, and the co-polymers. In the first group, the condensates, we find the phenol-formaldehydes, (Bakelite, Resinox, Durez); the urea-formaldehydes, (Beetle, Aerotex, Rhonite, Plaskon); the adipic acid-hexamethylene diamine, (Nylon); the melamine-formaldehyde, (Melamine); the phthalic anhydride-glycerol-linleic acid, (Glyptal, Duraplex, Beckosol); the maleic anhydride-glycerol-abietic acid, (Beckacite, Maleic resins, Amberol); the sebacic acid-glycerol, (Paraplex); and the ethylene dichloride-sodium tetrasulfide*, (Thiokol). The names in parentheses are, of course, the most common trade names used in the various industries, not necessarily those used in the textile industry. Those marked with asterisks are synthetic rubbers.

In the second group, we find the

larger and more recently developed resins such as the Vinylite A and Vinylite X types. In this group, the linear polymers, we have the indene-coumarones, (Cumar, Picco, Nevindine); the vinylidene chlorides, (Saran); the chloroprenes*, (Neoprene); the styrenes, (Styron); the isobutylenes, (Vistanex); the polyvinyl acetates, (Vinylite A); the polyvinyl alcohols, (P V A); the polyvinyl alcohol-butyraldehydes, (Vinylite X, Butacite, Butvar); the polyvinyl chlorides, (Vinylite Q, Koroseal); the methyl methacrylates, (Lucite, Methacrol, Crystallite, Plexiglas); the ethyl acrylates, (Rhoplex, Acryloid); and one of the butadienes*, (Buna 85).

In the third group, the co-polymers, we have the polyvinyl acetate-polyvinyl chlorides, (Vinylite V); another more complex ethyl acrylate, (Acryloid); another more complex butadiene*, (Buna S); and still another butadiene*, (Perbunan).

In many cases these resins can, as mentioned previously, be manufactured to have a variety of physical and chemical characteristics which they in turn impart to the materials to which they are applied. In addition to the number of effects which these resins are capable of creating in that manner, still more variation can be obtained through the use of softeners or plasticizers in the resins, and by a variety of methods of application.

The "Permanent Softeners"

The resins are not, however, the only important group of synthetics that is taking its place in the textile finishing room. Let us look, for example, at the softeners. There are available today, the so-called "permanent softeners". These softeners are not really permanent, but they are capable of withstanding quite a bit of punishment before losing their effectiveness, and as in the case of resins, they have become more important because of the increased use of rayons and other synthetic fibers, which have placed new demands upon the skill of the finisher.

These "semi-permanent" softeners are in many cases cation-active substances and they, theoretically, attach themselves to the fibers by means of their ionic electric-like charge. They are based upon the principles of elementary chemistry which state that a minus (anion) charge, is attracted to a plus (cation) charge, and vice versa. Since our most common fibers, silk, rayon, and cotton, as well as many others, are negatively charged (anion-active), they attract all cation-active substances within reach. With this picture in mind, it is readily understood why these cation-active softeners are so effective. The softener is really made up of two separate parts, the cation-active part and the fatty matter, the latter hooked onto the former very much like a tail. Therefore, when this cation-active softener is dissolved in a solution in the presence of one of the anion-active fibers, the cation-active portion of the softener is immediately attracted to them, thus drawing with them the fatty substances. The result of this action, multiplied by the millions of molecules present in a rinse bath, for example, is that the cation-active spear-heads have plunged themselves into the fibers wherever they made contact, leaving the fatty material deposited in the form of a layer on the surface of the fibers, yet held there by direct contact with the cation-active substance from within.

It might be well to note at this point, that these cation softeners have a tendency to make dyestuffs faster to washing with water, but while doing this, they also have a not-so-good tendency to make those dyestuffs less fast to sunlight. To broaden the picture a bit, the general statement might be made that since the finishing operation is becoming more basic in its contribution to the merits of the resultant product, we must be careful to take into consideration the fact that they do alter those products in relation to the other processes. We must, therefore, maintain more than ever coordination between the finishing department and all other departments. Attention is called particularly to the relationship that should exist between the dyer and the finisher. The dyer then is able to make the necessary adjustments in the dyebath, taking into consideration that every dyestuff used in the dyebath may react in its own way to a certain type of finish.

Moth-Proofing Materials

Within the past few years, the textile industry has become especially interested in the moth-proofing and moth-resisting processing of goods, and, no doubt, goods carrying labels attesting to effective treatments of this nature enjoy wider sales than those of competitive lines without that advantage. Here resins of several types find effective use for this purpose, as well as several complex organic compounds. The problem involved here is to secure an agent which is universal in its effectiveness against the varied types of beetles, moths, etc. The methods used for testing effectiveness of the agents are many, and although one or two have been officially accepted, it is safe to say that the tests have not been borne out in actual practical experience 100 per cent of the time. It is for this reason that many plants having the men and means for developing their own process for the purpose prefer to let those commercial companies which guarantee their products to the extent of paying any claims, take the risks.

The growing demand for antiseptic fabrics involves another finish of similar nature that should get mention. Here again various types of resins have been found effective, and in some cases, softeners, particularly sulfonated oils.

Flame-Proofing Finishes

Of especial interest in finishes today are the flame-retardant and the flame-proofing processes. With incendiary bombs having caused so much damage and discomfort in England, and we over here training the public in ways in which we might cope with the same thing—the public is becoming particularly conscious of flame-retardants and flame-proofed materials. Incidentally, the difference between the two is one of degree of effectiveness. That is, a material which may burn but which has a retardant action on the flame is called a flame-retar-

dant. A material which has been flame-proofed is one which will not burn at all, though it may char. A fire-proofed material, of course, is very similar, but the term is usually associated with a material that is naturally fire-proof such as iron, brick, and glass. On this score, one of the newer additions to the textile fibers, Fiberglas, is being played up for curtains, lampshades, draperies, awnings, etc. This new fiber is finding a place for itself in these and other materials because of its natural fire-proof properties, as well as other advantages, and this has prompted the users and other interested parties of the older fibers to actively stimulate this angle of finishing.

In addition to the commercial products marketed by the chemical companies, such as ammonium sulfamate, some firms are using their own formulae. These are often composed of some of the more common reagents such as, (1), a water solution of the ammonium salts of phosphate and chloride; (2), a water solution of borax and boric acid; (3), a treatment which is more resistant to washing than the two mentioned, a water solution of sodium tungstate; (4), a solution of sodium silicate; (5), several types of chlorinated resins. This is by no means a complete list of the methods used for this purpose, nor are those mentioned done so in the spirit of supplying instructions for processing. Here again a word of caution is in order concerning the possible effects on the dyestuffs. Therefore, exhaustive tests should be conducted before any large scale finishing of this kind is attempted. This point cannot be over-emphasized as much damage can result from neglecting it.

Water-Repellent Finishes

Another phase of finishing which has enjoyed wide use, especially in the womens' hosiery field, is the water-repellent, water-proofing, and splash-proofing treatments. We are reminded that there are differences between the three, but they are, here again, differences in degree to which the effect is obtained and retained. Among the older processes of this nature is, of course, the precipitation of aluminum hydroxide within the fibers, thereby clogging the capillaries and rendering the fibers non-absorbent. Other processes are dependent upon the surface precipitation of waxes on the fibers, still others upon the surface precipitation of synthetic rubbers, latex, etc., and others upon coatings of the individual fibers or the fabric as a whole with various resins, such as the Vinylite type.

Mildew-Mold Proofing

The mildew-resistant or mold inhibitant treatments are also receiving added attention due to the revealing by statisticians that the losses due to the growth of mildew in textiles is surprisingly enormous, and what is more, it is felt as much or more in industrial plants, as well as in households. These losses are, of course, sustained in the form of discoloration, deterioration of the fibers, and musty odors.

In a recent study by the Bureau of Home Economics*, over 135 chemical treatments were studied on cotton fabrics, and several of these treatments were found to be effective. One of the most effective involves the use of two types of materials already discussed, the cation-active softener, followed by methyl methacrylate, one of the resins mentioned earlier. Other treatments tested and found effective on cotton consisted of treatment with acetone, formalin, and soda ash; wax and aluminum acetate (the water-repellent treatment mentioned earlier); catechu, copper sulphate, and ammonium hydroxide; copper propionyl acetonate; copper and zinc naphthenate; and cadmium chloride followed by borax. Obviously, some of these treatments are based on the principle that mildew or molds do not crop up under dry conditions.

These treatments set forth by the Bureau of Home Economics should not be taken as effective treatments for all fibers, although they may be found effective for all in some cases. Rayon, a cellulose derivative, would perhaps respond favorably to treatments applied to cotton, but silk and wool, protein in nature, may require other treatments.

*Industrial & Engineering Chemistry, Vol. 33, No. 4 (1941).

Water-Attracting Finishes

As against the finishes making for water-repellency, there is also a demand for those finishes making for water-affinity. This type of finish finds extensive use in towelings of all kinds, sweatshirts, and textiles of that type. A finish of this nature has also been applied to hosiery and underwear, especially that of nylon and rayon, in order to give them more affinity for perspiration. When an article is properly treated in this way, it should absorb moisture and yet seem to remain dry. For example, in the case of a dish towel, the trick is to produce a towel which readily absorbs the moisture from the dishes, and yet is fit for use for a longer period of time before becoming wet on the surface, than is the ordinary towel.

Shrink-Proofing

Shrink-proof finishes are, of course, not new to the industry, but there have been, in recent years, new ways in which to accomplish this result on the various fibers—silk, rayon, and wool, particularly. Most of these processes involve the use of resins, either applied in resin form, or developed within the fiber. Also along the same line, or in the same vein, are the ravel-proof or slip-proof finishes. These finishes are the result of resin treatments and are, for specific purposes, very useful. Washable clothes, for example, are often unkempt after washing and pressing because the material begins to ravel at the hems and seams. These finishes, which have to be at least semi-permanent in those cases, have proven very effective against that fault.

The Odors and Anti-Odors

Dulling agents, materials which have been getting much attention for many years, are also tending toward permanent effects through the use of resins in the finishing room, although many thousands of pounds of "dullers" of the barium sulphate type are still being swal-

(*Continued on page 116*)

Keeping the Mill Clean

(*Article 4*)

Better quality to finished product; cleanliness builds good morale, prevents fire, reduces accidents. Good housekeeping.

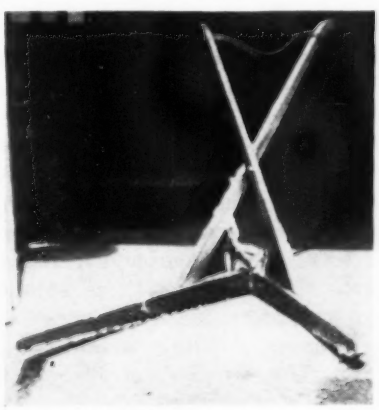
By Erwin Hard

SWEEPING in a textile plant is a job which usually requires very little skill, yet it is important that floors be kept clean. One thing that is important, as in all other cleaning, is that a regular schedule of sweeping be followed and that it be done with greatest efficiency. The sweeper must also know how to pick his waste correctly and prepare it for baling. For the protection of his health, and to protect his hands from splinters and sharp objects, he should be provided with a pair of suitable gloves when separating his waste.

Brooms & Brushes

For a long time the sweeper used nothing but the conventional straw or "stick broom". This broom is still excellent for use in certain places, but we have come to use better equipment in recent times. Most of our sweepers use two "push brooms", one in each hand at the same time. These brooms, or brushes, are filled with stiff horse hair, or fiber, or a combination of both. They speed the sweeping operations in long alleys and open floor space.

We have also constructed, what we call, sweeping "plows". They are very useful where large quantities of light sweepings have to be collected. This is not our original idea, but one developed years ago by an old carder; they are excellent time savers. They are used for the most part in the carding and spinning departments. Two wooden plow handles are hinged together about midway and work somewhat like a pair of large shears. Two projections about 3 feet long are attached to the bottom of the plow handles and on the bottom of each of these is tacked a strip of burnished fillet. These projections are also joined together by a hinge at the point almost directly beneath the crooked grips of the plow handles when the plow is setting erect. The sweeper walks along rapidly, and by moving his arms as if he were using a pair of large hedge clippers, and pushing the plow forward at the same time, can sweep the floor very quickly. By tacking some beaver board on each side of the plow it will carry a large quantity of sweepings and enable him to sweep long alleys without leaving piles of sweepings in the alleys.



Sweeping "plow" described in article

There have also been a few very modern methods developed in vacuum sweepings but as yet the writer has had no practical experience with these methods, and is therefore not prepared to discuss them with authority.

Convenient Cuspidors

Spitting on the floors has long been a troublesome problem in the textile mill, due in part to the inability of textile workers to smoke during working hours and their use of chewing tobacco; this problem is worse than in some other types of industries. We have all been guilty of looking too lightly on this, and allowing the dirty, unwholesome habit to contribute to a filthy, unsanitary situation. We might as well face the problem squarely, and *prohibit* spitting on the *floor*. We cannot change the acquired habits of some employees, but we can provide cuspidors and require workers to spit into them. We can do a great deal to educate them along the lines of why it is to their own advantage, as well as for the protection of the health of other workers, that they do not spit on the floor.

We have found after much experimenting that the most suitable cuspidor is one made of pressed wood pulp with an oil finish. These "paper" cuspidors are inexpensive (about $6.50 per thousand) and are easily disposed of after use. We do not sit them on the floor as we have found they get knocked over and the contents spilled. We made a number of racks from ⅛ x 1 ½-inch band iron so the cuspidors will fit snugly into them. We also attached to this rack a hinged cover. The racks may be fastened to posts, walls, or the head-end of machines. They should be about four feet from the floor.

The object of having the hinged cover is to prevent persons *spitting at* the cuspidor and missing it. This may seem unimportant at first, but it is one of the real reasons why this type of container works successfully. The person has to raise the cover to spit into the cup, and he cannot raise it if he is some distance from it.

A colored man passes through the mill about three times a week and replaces these cups. He takes the used ones out of the racks and

puts in new ones, dropping a hand full of sawdust in each as he puts it into place. The sawdust absorbs the moisture and prevents spilling. One man can serve our entire plant in about two hours. (52,000 spindle mill)

Lavatories and Toilets

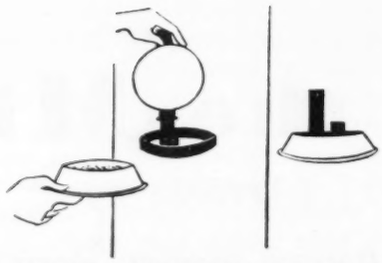
Keeping toilets clean and sanitary depends to some extent upon the type of floors and equipment we have. The floors should be of tile block or glazed concrete for best cleaning results. A suitable drain for the floor is also very important. Fixtures should not have wooden seats or covers but should be of the one piece, white, vitreous china type. Walls should be painted with enamel or lead and oil inside gloss paint. The walls of toilets and wash room cannot be expected to last as long without repainting as the other walls in the mill and still look good. Good ventilation is also most important at all times.

The persons who service and clean these rooms should operate on regular schedule. For convenience they should have a suitable truck for mops, brushes, powder, disinfectant, paper, etc. This truck can be made by the mill's carpenter and spaces in it provided for each of the things he needs to carry.

The writer will not suggest the name of any particular powder or disinfectant to use, but merely the "type" as there are many which are very good, but put up by different manufacturers, bearing different trade names. Three types are usually used. One is a good "bowl cleaner". This powder will clean the toilet bowl without much mopping if allowed to stand in the water a few minutes and then flushed. Yellow stain should not be allowed to remain on the finish, but be removed each time the fixture is cleaned.

The second powder or cleaning agent is for the lavatories. Usually this can be bought in cases of 24 or 48 handy boxes similar to a large salt shaker, and is used on a yarn mop or cloth when cleaning lavatories.

The third powder is for scrubbing the floors. Usually the scrubbing powder used on the mill floors, in connection with the scrubbing machine, is satisfactory. It is very helpful after cleaning the floors to use some good disinfectant such as a pine oil preparation with germ killing ingredient. This keeps down bad odors and is also an aid to sanitation.



Cuspidors of pressed wood pulp with an oil finish are handy and easily disposed of. Racks are made of band iron, attached to posts at convenient level so expectorators won't miss . . . . . .

A galvanized garbage pail with handle and cover should be placed in each toilet to help keep paper or refuse off the floor.

All ladies' rest rooms should be provided with sanitary napkin dispensers, so these may be provided at a nominal cost to women workers.

Towels of some kind should be provided for every wash room. There are many different kinds of cabinets and towels manufactured, and each plant may select the ones best suited to its need. The mill may be manufacturing towels or some goods which can be adapted to this use without purchasing them. Replenishing these should be a part of the regular service of the person looking after these rooms.

Drinking Fountains

Many mills have now installed electric refrigerators units for furnishing cool drinking water for their employees. Regardless of the type of fountains used, it is of utmost importance that they be kept clean and sanitary. Bubblers, mouth guards and waste water recesses should be scrubbed regularly with a suitable powder and rinsed clean afterward. If these parts are kept bright they will not be so likely to collect dirt and germs. Plenty of clean, cool drinking water helps to keep employees happy and satisfied. We may also expect more efficient work as another result.

In addition to plenty of cool drinking water, we have found salt tablets helpful in hot weather. We have one dispenser at each fountain, and each time an employee presses a button a salt tablet drops out into the hand. The tablets are easily taken and they help to prevent heat fatigue, by replacing the salt lost from the blood through perspiration. The tablet and dispensers may be obtained from most salt manufacturers.

Trash Receptacles

Few mills now operate on one shift and many plants run continuously from Monday through Saturday. Employees now have to bring a light lunch or purchase sandwiches from the canteen service trucks. These lunch papers or wrappers together with bread scraps, etc., must be disposed of. There are also other items of trash which are likely to be thrown on the floor if no receptacles are provided. Roving cans which have become rough around the top, and are not suitable for sliver, may be used, but covers should be made to fit them. If this is not desirable some kind of covered trash container should be provided. These help to keep the plant clean and orderly. All receptacles should be plainly marked in somewhat this manner: i. e. "Deposit Trash Here, Help to Keep Our Plant Clean".

Roaches and Water Bugs

Some plants, especially those with dyehouses and bleacheries, have had difficulty with the "roach problem". While the writer is not a chemist, or an exterminator, he has found an effective remedy for this situation. By mixing 5 pounds of powdered cake sugar with 100 pounds of powdered borax, and dusting the infested areas, roaches will disappear. If you don't believe us, try it!

First Aid Room

Last, but *certainly not least*, the place where first aid is given to employees must be kept clean and sanitary. All first aid equipment, lavatories, medicine cabinets, etc., should be regularly scoured. Such instruments as scissors, small forceps for extracting splinters, etc., should be sterilized and kept in an air tight case. The walls, ceiling and furniture should be paint-

ed with light gloss enamel and be regularly washed with a disinfectant solution.

While some important matters pertaining to the keeping of our plants clean and sanitary may have been omitted, the writer hopes that the suggestions offered here may inspire renewed interest in this subject. It is important to all of us that we have a clean, healthy place in which to work.

Floor Scrubbing

One of the most important requisites for keeping the mill clean is satisfactory floor scrubbing. For several years this was done by hand in our plant. We maintained a crew of 16 colored men and a foreman. A cart carrying two 40-gallon water cans was used for the fresh water supply. We used a scrubbing powder with some abrasives, and the usual fiber brooms with the squeegee rubbers in the back of the brooms. The scrubber would pour out a small quantity of water, scrub a small area, then turn his broom over, using the rubber to scoup up the dirty water. Another truck was used for receiving the dirty water.

The labor cost amounted to approximately $255.00 per 40-hour week on 426,000 square feet of floor space. The scrubbing frequency was about every eight days. Our floors were kept fairly clean with this hand method, but the cost was far more, and the work was not nearly so satisfactory, as with the electric machines we are now using. The 17 men were replaced by one operator and two assistants. The total weekly cost of labor dropped to $47.00 for 426,000 square feet and the scrubbing frequency cut to seven days.

Machine Coverage

Machine coverage: With a good 18-inch machine and a two-man crew, we should get from 1,800 to 2,000 square feet per hour weekly average. This of course does not allow for going under the frames at all. When brooming under or scrubbing under the frames is desired a three-man crew should be used and then we might say the average is cut to around 1,500 square feet per hour. However, if

Courtesy, Finnell System, Inc.

a thorough scrubbing is done with a very small 11-inch or 13-inch machine used in conjunction with the larger combination machine, a more thorough job can be done under the frames and of course does not have to be done as often as is the case with "brooming under". The floor just stays cleaner longer under the frames with machine scrubbing because it is gotten cleaner. This machine does have a capacity up to 3,000 square feet per hour on wide open aisles. The reason for this is that in a 24-inch aisle two trips must be made and in a 36-inch aisle it could be covered also by two trips, the brush ring being 18 inches wide. We like to do the whole job as we go, using a three-man crew and brooming under and around all frames, posts, etc.

With the power drive and larger machines the production really doubles. The writer has covered 6,000 square feet in one hour, in one department, under test. This was on a wide hall with no obstructions at all. Under operating conditions, as in the cotton mill, this coverage is out of the question. This machine does do 3,000 to 3,500 square feet per hour with two-man crew in cotton mills. That is, in those mills having larger alleys, or wider alleys and totaling maybe some 100,000 to 150,000 square feet with this larger machine.

So to sum it up, it is safe to say that this machine can produce approximately five times as much work as can be done with a hand crew working the same number of man hours. The power drive machines will increase that to about 33 ⅓ to 40 per cent more work with the same man hours.

Cleaning Ingredients

In most cases the solvent cleaning powders are more efficient and less expensive to use than the grit or scouring powder. In a few instances a scouring powder should be used, and there is only one good reason for using it then. In some mills when scrubbing is done on the second floor the water runs down to the floor below. This is due to a faulty flooring and sub-floor on the second floor. The grit remaining from the scouring powder has been known to fill up the cracks to help make the floor water tight.

This problem has also been solv-

ed in a way with the new combination scrubbing machines. This is done by feeding the solution to the floor and take up the solution immediately or in the same operation with the vacuum intake. In this way the water does not remain on the floor two seconds. This is known as single scrubbing; however, picking up the water on the second trip over gives the solvent powder more time for softening of the dirt and oil on the floor.

Scouring powder is, though, more efficient on a single scrubbing for its action is immediate. Incidently, a scouring powder of good grade who's soapless stock is made from high grade vegetable oils rather than animal fats, pure volcanic ash ground fine and screened and non-caustic soda ash is added, is a type compound which will go about one-third further than the abrasive powders made of the known lower priced ingredients.

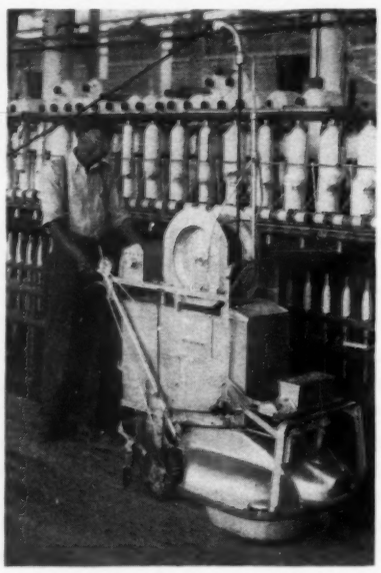
In the average mill cleaning, some five to ten pounds of scouring powder at from 3 to 5 cents per pound would be used to clean 1,000 square feet. Five pounds of a solvent cleaner at from 8 to 10 cents per pound mixed in 50 gallons of water would clean and in most cases clean better some five to eight thousand square feet. Or 30 cents worth of scouring powder would clean about 1,000 square feet while 30 cents worth of solvent would clean some 3,000 to 4,000 square feet.

A soap powder *should not be used* for that cannot be expected to break down the mineral oil lubricants on the floors. It will move some of the dirt, but not the "build up" of oil which really holds the dirt to the floor.

Care of Scrubbing Machines

A floor scrubbing machine is a precise machine given to a man to do more work better and in less time than has been done by hand. This fact should first make the management select a man capable of looking after the minor things on the machine, not only just operate it. Just any "broom handler" should not be used. There are one or two minor oilings to be done each week. The operator should do that; he should see that all nuts and bolts stay tight, and above all he should be made to keep the machine clean and thereby take some pride in it. The crew should be given some 15 to 30 minutes at the end of each day to clean up the equipment. Then once a month he should take the machine into the shop for a mechanic to look it over and do the monthly oiling and greasing. This duty should, as with all repairs, be given to the same mechanic each month. Time will be saved by having someone entirely acquainted with it's mechanism.

It is also very important to have a suitable place where the machine may be rolled in and locked up, when the days work is finished. Otherwise if the plant is operating other shifts the employees



Courtesy, Finnell System, Inc.

are likely to tamper with the machine and, not understanding its operation, may damage it in some way. It also causes the operator to take more pride in the fine equipment he has to work with if he is the only one operating it.

Scrubbing Alleys

The simplest manner to follow in scrubbing alleys is to plan to scrub your entire mill once a week. Just follow the route of the goods being manufactured in the mill and in this way you keep ahead of the dirty truck wheels coming into the mill. In some alleys maybe a little more than five pounds of a solvent powder to 50 gallons of water should be used. This is accounted for by the type of lubricant and the amount eventually reaching the floor. Each particular man will have to study that out for himself.

The 18-inch machines usually go everywhere in each alley where the operator walks. Meaning that oil, causing slips and falls, is removed where operators walk. In many places the weavers alleys are so narrow that this must be done by hand or with a small auxiliary scrubbing machine.

Economies of Floor Scrubbers

With a machine a far cleaner floor is to be had. In nearly every mill machine installation, that mill has saved in labor the entire cost of the equipment within 18 months and more often in less than one year. This fact has also held true with the rental of the same equipment, as is done in most mills; in each instance there has been a net saving over the rental paid to be some two or three times as great as the annual rental.

Types of Brushes

The stiff palmetto fiber brush should always be used with the solvent cleaning powders. With scouring powder, maybe a more efficient cleaning, at slightly higher cost can be had. Steel wire brushes should be used *only after consulting a competent floor maintenance engineer.* We do not want our floors to become rough, thereby causing the scrubbing problem to become worse all the time.

Power Cost on Machines

The larger scrubbing machines use 460 kilowatts of electric energy per hour. That is the consumption for the brush and vacuum motors. These will average running about six hours out of every eight. On the basis most mills buy their power this cost is relatively very small.

Rent or Buy Machines

The question of whether to rent or buy scrubbing machines is very debatable. I am told that the experience of one floor machine salesman is one sale to ten rentals and one cancelation of terminated lease to twenty leases, signed or renewed. When a mill changes to machine scrubbing it is not unusual

to have two men with a machine do what 12 to 16 men have been doing by hand. In this case you are setting up a schedule for a few men to work on. When the machine is broken down it is not always easy to pick up those extra men to help your machine crew do the work by hand. This just means that you are now depending on machinery to do your scrubbing work. The same thing might be true should you use hand looms when your power goes off or a few looms break down. Now with the scrubbing machine, when that breaks down you only have one, so the whole job is held up until repairs are made. Then on the other hand it has happened often that the machine shop is just so busy with production equipment repairs that no time is to be had for a floor machine. The best answer to that is the *rental* machine which is never over one year old. Few breakdowns can be expected during that year.

As for the machine purchased, the older it gets it is natural to expect increasing repairs. Yes, the rental may cost you more in dollars and cents, but you do get that added service of more continuous operation of a piece of machinery which is usually the only one at that mill. It may be summed up by drawing a picture of a traveling salesman. Most salesmen trade cars each year. Why? Chiefly because of great mileage and because they must depend on continuous operation of the car to get around. He may pay a little more for his car mileage but he is seldom bothered with repair shop hold-ups. So on the rental deal the mill always has a properly operating machine, or gets one when needed.

One important factor which is often overlooked is the safety of the workers. With hand scrubbing a great deal of water is put on the floor and has to remain there while scrubbing the several areas each man has. The newer machines scrub and take up their own water by vacuum. This leaves the floor fairly free of water at all times. Then, too, small signs marked "wet floors" may be put at the end of the alley which has just been scrubbed and this serves as a warning to operatives to walk cautiously over this floor or avoid using the particular alley for a short time if possible.

We have also found it is very helpful for one of the assistants to carry two "push type" sweeping brushes along with his hand truck, and sweep the alley out before the machine enters. This will prevent the dirty water having so much "gummy" substance in it, and pipes will not stop up so badly. If this is not done many times travelers, bits of leather, wads of thread, lint, etc., choke the suction pipe, or pump, and cause trouble.

A real good job of floor scrubbing goes a long way to prevent wasted or damaged filling or warp which may be accidently dropped on the floor. If the floor is clean these may be picked up and used without making seconds.

Again, too, the health of the worker comes in for some important consideration. We can be justly proud of our plant and the workers will appreciate nice clean floors. Visitors will also be very much impressed by this fact alone. Don't you agree that this subject deserves some real consideration?

What Is a Business Man?

We all know that business man is anyone who invests his money in an enterprise, to employ others, himself, or both. He risks his own "roll."

Some get by. Some make good money. Many go broke.

We also know that most successful business men were originally employes of others. The great majority of them started from scratch. More and more of those who inherit a business or a fortune, lose it to brighter, harder-working men. "Shirtsleeves to shirtsleeves in three generations."

In this country you sink or swim on your own ability—and your knack of "selling" your ability. That's the blessing of this American system.

And yet . . . to hear some folks talk, you would think that as soon as an employe becomes a business man, he grows horns and cloven hooves.

How can that be? He is still the same fellow he was before. He becomes no more honest, no less honest; no more friendly, no less friendly than when he worked for someone else. He simply is taking greater risks—perhaps has more worries.

Same here in the shop. Once a man is promoted to supervise others, he becomes an employer—whether he has the responsibility for the work of two others or two thousand. Just where along the line does he cease to be a regular guy?

Many go into business in another way. They don't start factories, trucking companies or retail stores. They don't give up their present jobs. They simply invest their hard-earned savings in stocks or bonds — helping to finance other business, making jobs for others. They risk their money in the hope of profit. They are part owners of such companies as American Telephone and Telegraph or General Motors. They, too, are business men.

Are they, too, to become objects of suspicion or abuse as soon as this takes place? Are they any less honorable, less neighborly, less deserving of a square deal in this country of ours!

You know the answer!—*New Departure News.*

Turner Promoted by International Nickel

E. A. Turner, for more than 15 years in charge of Monel and rolled nickel sales in the chemical and associated fields for The International Nickel Company, Inc., 67 Wall Street, New York City, has been promoted to the post of assistant to Sales Manager J. F. McNamara. At the same time, W. J. Calnan and H. D. Tietz were appointed to similar positions. C. J. Bianowicz has been made head of the chemical section of Monel sales succeeding Mr. Turner.

E. A. Turner

The Worker—a Patriotic Salesman

By W. M. McLaurine, Secretary-Treasurer

American Cotton Manufacturers Association

WHILE THERE are many other sales talks that ordinarily would precede this, the present war situation makes this one very appropriate now.

Food, clothing and munitions are war essentials. They are three elements that develop a condition for good soldiers and efficient fighting.

The textile industry is doing a valiant service in furnishing to the war program all of the thousands of types of textile products that it needs. Quality and quantity have been delivered so far on time and as needed.

While managers and machinery are important components of this result, yet behind all of these and co-equal with them in the great effort, are thousands of the most loyal and efficient textile workers in the world

Their deft fingers and manual skills have operated these machines with a truly patriotic will. Many have forgotten wages and hours and now are working for freedom from the slave threats of foreign powers. Truly they are as great in their contribution as any other contributing group. No army can fight without equipment. The textile workers of this nation can be depended upon to furnish whatever textile materials may be needed.

Flying planes and driving trucks are heroic and important, but the home guard making it possible for planes to fly and tanks to roll is also heroic.

Every worker in the textile industry must be made to realize that through his work he is doing a patriotic service to his country.

They say that this is the best clothed army in the world. The workers in the textile industry have been smart, faithful and efficient or this would not be true.

This is every one's war, hence every one must do his part so that freedom will not be lost. The textile workers of the South have always been patriotic. At no time have slackers or fifth columnists been found in their ranks. They have a glorious heritage and they must be alert to cherish and protect it. The worker must appreciate his importance in this conflict and sell his ideas of devotion to duty and patriotic services to his country to all others.

THIS is the third of a series of short articles by Mr. McLaurine, prepared especially for "Cotton", discussing various phases of public and industrial relations work and problems of textile mills.

The series is in keeping with the current, active policy of the American Cotton Manufacturers Association in this sphere.

The first article appeared in the November issue, was entitled "The Worker Is an Ambassador". The second, in December, was "The Worker is a Salesman".

There is a dignity in labor, exceeded by nothing else. The worker must appreciate his contribution to the morale of the fighting forces of this nation.

He is a builder of civilian morale also because he is doing his dead level best to see that all people in this nation are clothed and cared for in this emergency, insofar as textile products are needed.

The civilian call is just as demanding because the people at home must be equipped to work and make possible many other services for the front lines.

The textile workers always furnish their quota for the service also. On tablets in nearly every mill in the South, there are lists of names of those who fought and many who died in World War I. They are great lovers of home and country. No one has ever had cause to question their patriotism. Textile workers serve and sew for the Red Cross, thus implementing the work of the day in which they have made millions of yards of cloth for bandages and surgical dressings.

They have been loyal in the purchasing of War Savings Bonds and in donations to community services. They do all of these things and many more. They do all because they believe in Democracy, the American Way of Life and the teachings of God. Loyalty to his family and to his job, loyalty to his friends and to his organization, which enables him to make these contributions, will let a man do no less. The employer must help his workers appreciate their contributions and their importance in this great conflict through which we are passing.

All people feel better mentally and socially when they are made to realize that they are of some importance to the community and to the nation.

Textile employees realize this contribution that they are making but they, like all other people, "appreciate being appreciated."

While profits and sound financial institutions are absolutely necessary for the safety of this nation, the great motivating thought is giving and contributing to the national welfare in this emergency.

Every contributor, in services or money or otherwise, must be recognized and made to appreciate his contribution.

There must be no shadows of selfishness that black-out individual efforts. The textile worker in his unselfish devotion to duty is making a noble contribution. Lift his morale by letting him know that you and the community recognize his efforts. This will make him a better citizen for his nation and a better salesman for your organization and for you.

"Here Rest the Careless"

• A gruesome reminder, but most effective, is this model "safety" cemetery in the mill yard of the West Point Manufacturing Company Division at Langdale, Alabama.

Each tombstone carries an inscription describing how accidents occur, and a special lot is reserved "for those who ignore safety rules". Employees entering the plant must pass by the cemetery and their eyes naturally pick up the brief safety messages inscribed on the markers in the graveyard.

"I am a victim of playing in the plant", "I failed to report to first aid room" and "I worked on a machine without stopping it" are effective reminders that safety rules are to be obeyed.

The model graveyard is only a part of the regular safety program at this plant, but is certainly one way of keeping the employees safety-minded.

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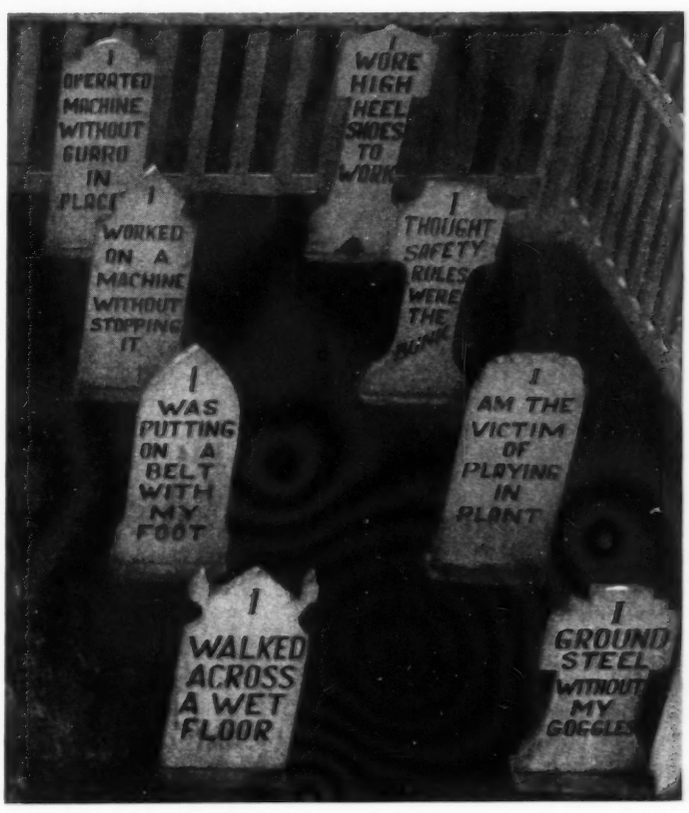

I OPERATED MACHINE WITHOUT GUARD IN PLACE
I WORE HIGH HEEL SHOES TO WORK
I WORKED ON A MACHINE WITHOUT STOPPING IT
I THOUGHT SAFETY RULES WERE THE
I WAS PUTTING ON A BELT WITH MY FOOT
I AM THE VICTIM OF PLAYING IN PLANT
I WALKED ACROSS A WET FLOOR
I GROUND STEEL WITHOUT MY GOGGLES

Textile Scientists Study Fibers

DISCUSSION of the cotton fiber and yarn properties featured the first meeting of the Industrial Fiber Society, held at Georgia Tech in Atlanta on December 4 and 5. This organization is the latest formal society to be created in the interest of textile research, and was conceived by a group of research physicists and chemists connected with southern textile plants. W. R. Marsden, director of fiber research, Bibb Mfg. Company, Columbus, Ga., acted as chairman of the organization meeting, and was assisted in the formation of the group by B. Reid Clanton, research chemist, Callaway Mills, LaGrange, Ga.; Otto Morningstar, research laboratory, West Point (Ga.) Mfg. Company; and others.

The purpose of the organization is to bring together the men in textile manufacturing plants and laboratories, and others, who have a mutual interest in the technical side of textile fibers, to study the fibers, their uses and applications, etc.

The initial meeting last month attracted a representative attendance from a varied number of sources, including manufacturing executives, technical and research men and others from textile plants, technicians from governmental and other laboratories, and from several educational institutions.

The general theme of the meeting was "Evaluation and Correlation of Fiber and Yarn Properties", and there were five sessions dealing with various phases of this theme. The first, on Thursday morning, December 4, was featured by a discussion of "Application of Physics to Fiber Studies", by K. L. Hertel, head of the physics department at the University of Tennessee, Knoxville, who developed the "Fibrograph" for fiber measurement, described on page 116 of the December issue of COTTON. On Thursday afternoon, Dr. Enoch Karrer, senior cotton technologist at the Southern Regional Research Laboratory, New Orleans, La., spoke on "Physical Properties of Cotton and their Relation to Factors Governing Utilization". On Thursday evening, an informal and unscheduled group discussion on the chemistry of the cotton fiber was led by Dr. Milton Harris, director of research of The Textile Foundation and the Textile Research Institute.

Friday morning, Dr. Carl M. Conrad, also senior cotton technologist at the New Orleans Laboratory, spoke on "Chemical Tests on the Cotton Fiber and their Significance". Friday afternoon, Malcolm E. Campbell, senior cotton technologist, U. S. Department of Agriculture, Washington, D. C., spoke on "Correlation of Fiber Properties to Yarn Strength".

At each session, the speaker listed presented the subject in detail, and extensive informal discussion of the matter was participated in by the entire group. A visit to the State Engineering Experiment Station at Georgia Tech was included in the program.

The sponsors of the organization felt that the initial meeting launched the society auspiciously and demonstrated the possibilities for an approach of this kind, by the type of men primarily constituting this group, to the technical side of the fibers used by the textile plants of the country. To an observer, an outstanding impression was the extent to which mills in the industry have actually moved into the stage of action on research and technical matters, as reflected by the number of technically trained and qualified men present representing manufacturing establishments.

"Cotton" snapshots during the industrial fiber conference in Atlanta. Top, a study in concentration at one of the sessions. In the center of this group are seen **Milton Harris, Ph.D.**, director of research for The Textile Foundation and the Textile Research Institute; **W. M. Yow**, technical superintendent, and **S. W. Hempstead**, assistant general manager, Martha Mills, Thomaston, Ga.

Second row: left to right, **Simon Williams, Ph.D.**, Bureau of Industrial Research, University of Texas; **B. Reid Clanton, Ph.D.**, research chemist, Callaway Mills; **H. H. Willis**, dean of Clemson textile school; **John T. Wigington**, director of research, The Cotton-Textile Institute; **John P. Elting, Ph.D.**, director of research, Kendall Mills; and **Otto Morningstar, Ph.D.**, director of research, West Point Mfg. Co.

Third row: **W. F. Busse, Ph.D.**, research department, B. F. Goodrich Co.; **C. A. Jones**, dean of Georgia Tech textile school; **W. M. Yow** and **S. W. Hempstead** of Martha Mills

Carding-Spinning Discussion by Alabama Operating Executives

ALABAMA TEXTILE Operating Executives, an association composed of superintendents and overseers of the Alabama mills, met in Auburn, Ala., November 29, for the regular fall carding and spinning discussion meeting. A large crowd was present. The meeting was in charge of Frank K. Petrea, general chairman, who is superintendent of the Samoset Cotton Mills, Talladega, Ala. Discussion on carding was led by Harold M. Clark of Avondale Mills, Sylacauga, and that on spinning by A. H. Randall, general superintendent of Alabama Mills.

J. E. Hannum, assistant dean of engineering at Alabama Polytechnic Institute, Auburn, was introduced and spoke for a few minutes, describing the courses recently installed throughout the state under the Engineering Defense Training Program, sponsored and financed by the Federal Government. The schools are for the purpose of adult education in industries catering to national defense, or for persons who expect to be working on national defense projects. The school operating at Auburn is held at night for the benefit of those working in the daytime and is especially designed for members of the textile industry, the subjects being carefully selected after conferences with many textile executives; other schools for the textile industry will be located throughout the state, and for other industries as the enrollment calls for and the instructors are secured.

A visitor introduced at the meeting was G. H. Dunlap, on leave from the faculty of the Clemson College textile department, who is doing practical mill test work under sponsorship of The Textile Foundation and supervision of The Arkwrights and the Southern Textile Association, and who told of certain tests already being run. He invited the Alabama men both to take part in the test work in their own mills and to suggest other tests to be carried out on a co-operative basis. Some of the tests underway, as described by Mr. Dunlap, are on the slasher consisting of seven 30-inch cylinders; various roll settings; loom stops before and after installation of cleaners on spoolers and spinning; on pickers with and without blending reserves; old reconditioned and new drawing; increased licker-in speed; one-process against two-process drawing; spinning using all types of top roll covering; spinning using cork rollers equipped with different diameter cots; long draft drawing against one-process drawing; etc.

John T. Wigington, research director of The Cotton-Textile Institute, spoke for a moment on the work being done by his division of the Institute, saying, "We hope to keep up with all of the research work being done, and to correlate it, making it available to the mills in terms of spinning value."

Folds in Picker Laps

Harold M. Clark of Avondale Mills led the discussion on carding, the first question being "How can wind rolls or folds in picker laps be prevented?" He explained that the question pertained to trouble between the calender roll and the press roll on pickers, wherein a lap or fold developed after the lap reaches approximately 8 inches in diameter, and runs anywhere from 18 inches from the selvage to all the way across the lap. Answering this question, Frank Fuller of Langdale (Ala.) Division of West Point Manufacturing Company said, "Everybody has this trouble. Most of it is caused when we start the picker up on the first two or three rounds. It can be caused by the logger head binding on the pin and causing it to bind."

Ben H. Crawford, instructor in the Auburn textile school and secretary of the Alabama association; and **Harold M. Clark,** of Avondale Mills, Sylacauga, who led the discussion on carding . . . . . .

A member from Pell City told of having the same kind of trouble but at his plant they traced it to the roller in the lap rack head being dry, and most of the difficulty, was eliminated by either lubrication or replacement so that the pin could be allowed to turn freely. Also, sometimes the press roll is not perfectly balanced, he said, and there is a heavy side, causing a difference in the press roll and the calender roll—lubrication and tension is the trouble.

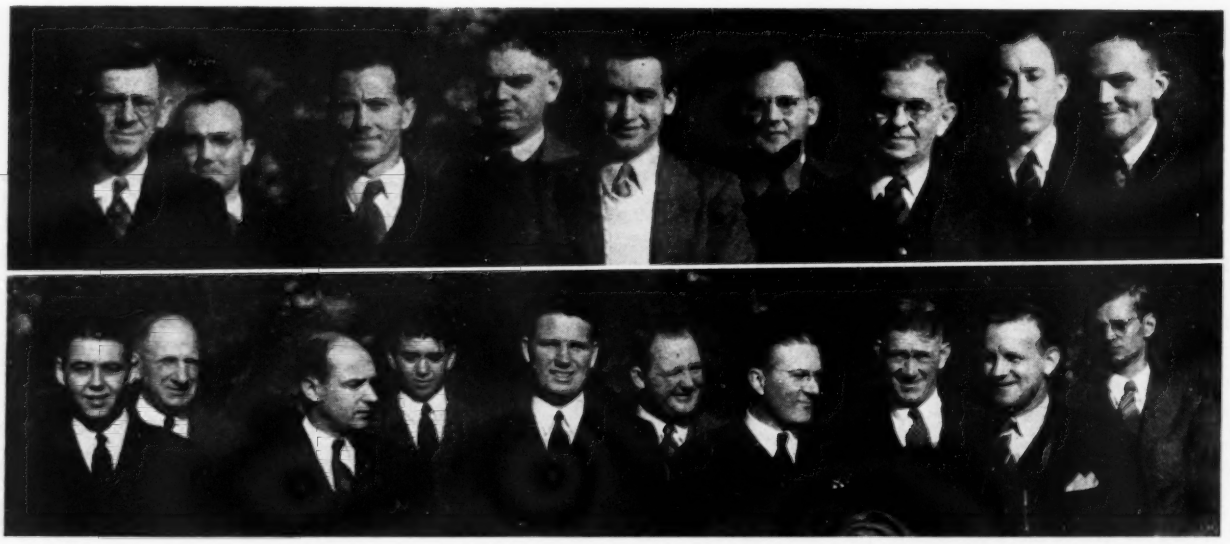
Someone else considered that the folds in the laps might be caused by not having good leather around the screens. Ernest Johnson of Jefferson (Ga.) Mills agreed with the foregoing and added that it could be caused by a crooked lap pin. Members of the executive committee had discussed the question and they contributed that a back draft on the screens might lead to the same trouble. One man said he had noticed folds in the laps when his picker was equipped with a chain drive, but since going back to gears on his pickers he had eliminated them.

Split Laps at Cards

"What can be done to prevent split laps on cards?" was the second question. It was the consensus of opinion that the place to correct this is in the picker room, one man saying "I don't think you will have split laps if you will keep the right tension on the lap in the picker room and keep the fingers set right." He then brought out that much of the splitting is caused when there is a change of relative humidity in the picker room; if the tension is correct for a normal humidity, and then the humidity changes, it will also change the tension in the lap as it is formed at the picker.

J. A. Bone of Lanett (Ala.) Division of West Point Manufacturing Company answered that he has some split laps and has found that most of them are due to faulty air draft from the fan speed, and in not keeping the picker clean, resulting in chokes. He cleans his pickers on Sunday. Also, according to Mr. Bone, the laps can be split when the picker tender pulls on the lap.

Report and photos by John C. Fonville.



At the Auburn meeting. Top row, a group of men from Avondale Mills; left to right: **J. W. Heacock, M. R. Cranford, Floyd McCullough, F. E. Bulger, D. L. Epperson, J. F. Cooley, O. S. Smith, C. G. Bramlett, B. D. Snow.**

Second row, left to right: **John Harris,** of Bama Cotton Mills, Enterprise, Ala.; **F. D. Jacoway,** N. Y. & N. J. Lubricant Co.; **Homer Roberts,** Avondale Mills, Sylacauga; **Charles Feagin,** Bama Cotton Mills; **Hamp Morris, III,** Bama Cotton Mills; **H. B. Askew,** National Ring Traveler Co.; **R. Bigham Smith,** Terrell Machine Co.; **R. T. James,** Bama Cotton Mills; **Ed Branch,** Atlanta Belting Co.; and **E. A. Feagin,** Bama Cotton Mills.

The chairman added that some of the splitting might come from feeding waste unevenly into the pickers, and this was concurred in by Mr. Snow of Avondale, who told of having trouble with laps splitting when waste was fed into the line in lumps, but being remedied when the waste feed was made more even. A representative from Samoset Cotton Mills has found that it is helpful to have the beater on the finisher section operating about 100 turns per minute slower than the blade beater, and to keep most of the cotton on the top screen instead of distributing it evenly on the screens.

The point of feeding in too much waste was again brought in, by another member, who also said that it is helpful to use finger bars on both top and bottom to mark the lap. Speaking for one division of Alabama mills, a man said "keep the chokes out back of the screens and keep the fingers set properly and it will help."

Executive committee members brought out that split laps occasionally occur when changing from old to new cotton, and two ways of preventing the splitting is to feed roving into the lap as it is formed and to wrap the calender rolls with copper wire, which will give the rolls a firmer grip and press the cotton into place better.

Production and Licker-In Speed

"If the production of a card is reduced from 12 pounds per hour to 8 pounds per hour, should the speed of the licker-in be changed? And if the staple length of the cotton is changed from ⅞-inch to 1 ⅛-inch, would you change the speed of the cylinders" was the next question. A member said that the only reason to lower the production of the card would be to get more cleaning, and the more beats per inch the cotton receives by the licker-in the cleaner it will be, implying that the speed of the licker-in would not be changed when reducing production. He also said that if he wanted better cleaning he would increase the speed of the licker-in, but that it is possible to overdo this and impair the breaking strength.

Another man said substantially the same thing in other words by giving his experience of increasing the card production and having to increase the licker-in speed in order to clean it. "If you want to get the stock clean you would not reduce the speed of the licker-in, but would speed it up," he said.

One carder considered that there is still more involved in the question because if the settings of the feed plate and mote knives are correct for one speed, they would not be correct for another speed, and it would be necessary to adjust other settings also.

This brought forth another's experience as follows: "We have not cut down on production, but have speeded up our cards. We increased the production 30 per cent and increased the speed of the licker-in 28 per cent and the speed of the flats 56 per cent and got just as good results. We drive our flats from the feed roll and the work is in the same proportion. We have increased the speed of the licker-in to 39 per cent and the flats in the same proportion (450 r.p.m. to 780 r.p.m.) and it did not injure the breaking strength." But he also said that he would not advise a licker-in speed increase of over 30 per cent. The foregoing results were achieved on Middling ⅞-inch stock, 14-ounce lap. He then called on another man to describe the Royal Speed Control, which was done. It operates by bringing the flats under control of the doffer instead of the cylinders, and instead of changing the production gear, the speed of the licker-in is increased to get better work, and the speed of the flats is increased. Tests have been run with this device, according to the speaker, on increasing doffer speed to as high as 21 r.p.m. with good work.

Results of mill tests were given by one man as follows: Tests run on licker-in speeds at 460 and 500 r.p.m.; at 460 r.p.m. the waste was 5.63 per cent, the average number 20.55 and the breaking strength 76.84 pounds. At 500 r.p.m. there was 6.83 per cent waste, average numbers 20.44, and breaking strength 76.5, or very little difference in break with more waste removed.

Getting to the part of the question on increasing staple length and changing speed of cylinders, a member said, "I would not change the speed of the cylinder but I would go off farther on the feed plate." R. B. Horsley of Pepperell Manufacturing Company, Opelika advised that they have not experimented with this, but that his plants run ⅞-inch stock in one mill and 1 ⅛-inch in another and the speeds of the cylinders are the same. One other man said that he would not make a change. Speaking for the Piedmont (Ala.) Plant of Standard-Coosa-Thatcher, a representative told of running 1 $\frac{1}{16}$-inch to 1 ⅝-inch stock for combed work and they do not change the speed of the cylinder when increasing the length of the staple.

B. K. Dunn of California Cotton Mills, Uniontown, Ala., runs from $\frac{11}{16}$-

inch to 1 1/16-inch stock, carding 12 pounds per hour, and does not change the cylinder speed, but does make changes in the settings of the feed plate on the longer staple because it is harder to clean and he tries to save more of the staple.

Mr. Petrea asked if the cotton would be just as clean, running the same settings, if 7/8-inch and one-inch stock were run. In other words, will shorter cotton clean easier? Someone reported running these two staples in his plant and the results are that he gets cleaner stock and yarn from the inch staple than he does from the 7/8-inch. A man from American Thread Company, Dalton, Ga., runs 15/16-inch to one-inch stock, taking out 8 per cent at combers, and he has seen no difference in the cleanliness of the yarn. Mr. Bone of Lanett told of his experience which did not tally with the other reports. He runs 7/8-inch and 15/16-inch with the same card settings and finds that the longer staple looks worse, and said, "With the same settings and speeds, the short staple will clean better. In going from 7/8-inch to 15/16-inch I would like to cut the doffer speed from 11 r.p.m. to 7 r.p.m., which would give the same amount of cleanness."

Experience with changing to longer staple and not getting the same degree of cleanliness was in agreement with Mr. Bone, according to a report from Jefferson (Ga.) Mills: "We run 7/8-inch and 15/16-inch filling and 1 1-32-inch warp, and have to change some cards from one cotton to another, and we find that the long staple does not clean as well with the same settings, and we have to change the settings."

Mr. Israel of Stonewall (Miss.) Cotton Mills mentioned that his plant is running denim and on the filling they buy a special short staple cotton and get better cloth from the shorter staple cotton than from the long staple.

It was general opinion among the members of the executive committee that longer staple stock is harder to clean and is harder on the card than shorter staple, and that running the cylinder on the card too fast may loosen the clothing.

Cleaning Drawing Frame Rolls

The next question was "How often do you clean steel rolls on drawing frames and does difference in grade of stock (cleanliness) lengthen or shorten time between cleaning? Does amount of oil added to cotton in picker room affect length of time between cleaning?"

Mr. Bone considered that the cleanliness of the cotton has much to do with the cleaning schedule on the drawing frames. He takes the rolls out on the drawing frames every month and scours them, using Middling cotton. Also, creeling solid at each doff they clean the rolls with a brush and wipe off the machine. If low grade cotton were run, according to Mr. Bone, the cleaning schedule would be more often. As for oil affecting the cleaning schedule, he said that this depends on the amount of oil put in the cotton. His plant uses .2 per cent and he has noticed no difference in the condition of the rolls.

The chairman brought out with Mr. Bone cleaning as much as he reported he is cleaning more than anybody else. To this Mr. Bone said that it is necessary to give the drawing frames very close attention if the mill has one-process roving, and added that the flutes on the rolls are cleaned with a wire brush.

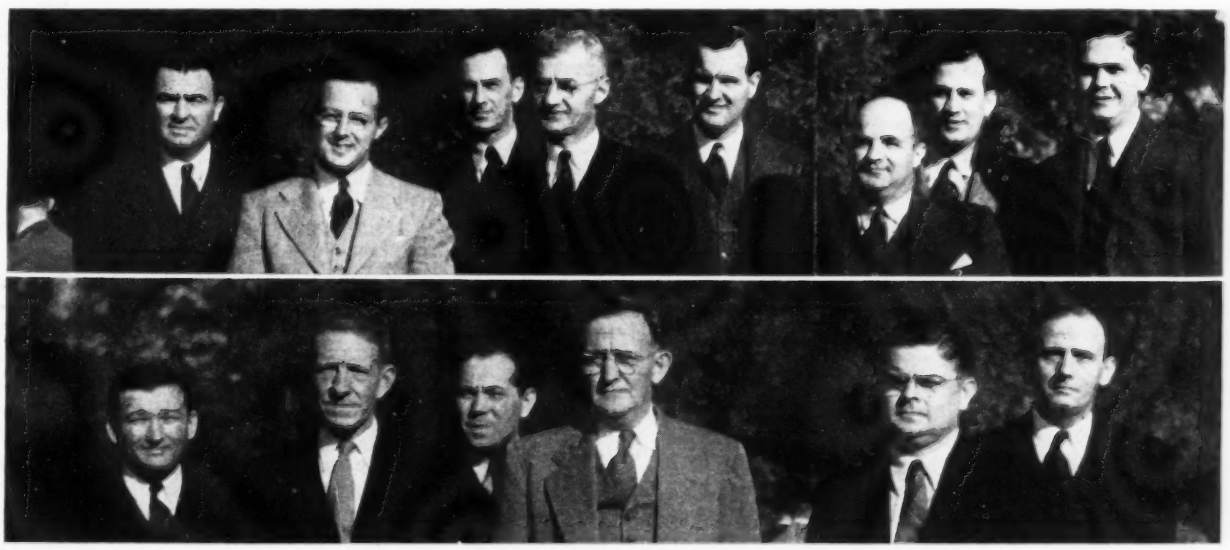
Fred Phillips, Buck Creek Cotton Mills, Siluria, Ala., said, "We clean rolls every week, and we run about .2 per cent oil. I think that the oil has something to do with the residue that is left on the rolls. We clean out the gear boxes, etc., once a month."

"We take the bottom and top rolls out every 5 months," said Roscoe Roberts of Lincoln Mills, Huntsville, Ala.

Card Strips Vary

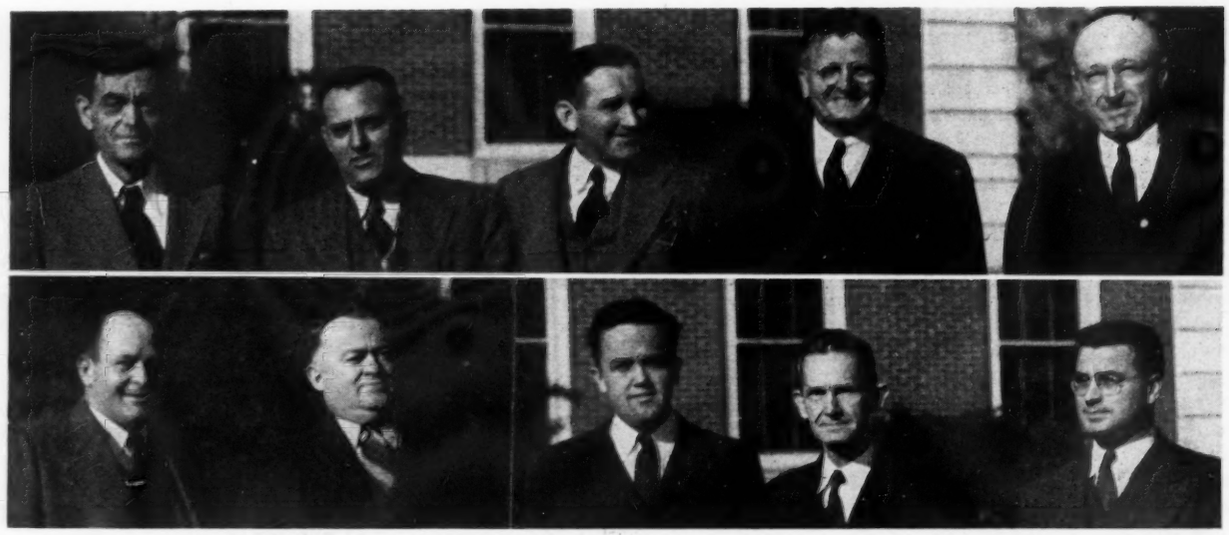
"What causes flat strips to vary from card to card with the same settings, from one card they will average 20 grains per flat, and from another they will average 36 grains per flat?" was another question. T. H. Floyd of Tallassee (Ala.) Mills brought out that outside of settings, slack clothing could cause a difference because the clothing that is loose will be thrown closer to the flats by centrifugal force and thereby give a variation. Also, vibration under the card could cause the same trouble. He mentioned too that dull clothing will give more strips than sharp wire. One of Mr. Floyd's men also added that slow flats (because of belt), stripper plate bowed and condition of licker in and feed plate might cause variation in strips.

Mr. Randall reported finding variation of from about 12 to 18 grains per flat and attributed the difference to the condition of the wire on the flats and cylinder, some cards having new cylinder fillet and old flat wire and vice-versa. He also mentioned loose wire, which cannot be felt when gauging the card for settings, but which permits a different setting when the card is operating. Mr. Randall said



Two other groups at Auburn. Top row, left to right: **Falls L. Thomason**, N. Y. & N. J. Lubricant Co.; **W. M. Carpenter; B. S. Askew**; R. O. Roberts, Lincoln Mills, Huntsville; **D. P. Paste, III**, Armstrong Cork Co.; **A. S. Jay**, of J. E. Rhoads & Sons, **Stuart McRae**, Avondale Mills, Alexander City; and **C. C. Clink cales.**

Second row, left to right: **B. G. Miller; W. L. McConnell; G. Bates; W. J. Jordan** and **R. W. Schrimshire**, of Jordan Mills, Columbus; and **J. F. Bridges.**



Ten more of those at Auburn. Top row, left to right: **W. F. Hutcherson; Charles E. Willis; J. H. Canady; John H. Hampton, of Fairfax Mill; and H. B. Bergfeld, of Bemis Bro. Bag Co., Talladega.**

Second row, left to right: **F. M. Wallace,** Keever Starch Co.; **Frank K. Petrea,** Samoset Cotton Mills, Talladega, general chairman **of the association; W. P. Camp; E. W. Camp,** head of the Auburn textile school; **and A. H. Randall,** general superintendent, Alabama Mills, Inc., who led the discussion **on spinning.**

that his plants have a program underway of trying to get the same amount of strips from each card, and they have to set each card individually with relation to the work produced by others, and even then it will vary.

At this point Mr. Petrea asked if a set of badly worn flat chains would cause the strips to vary, by permitting the flats to turn so that the full surface would not work against the cylinder. This was answered in the affirmative by the chairman. A representative from Lanett said that he found the variation in flat strips too much, and when he put on new flat chains it improved conditions.

Clean Licker-In Bonnet

In a discussion of top flat clearer rolls laid in the loop of flats to keep the licker-in bonnets clean, a member from Wetumpka (Ala.) plant of Alabama Mills said that they will do the job very well, but his cards are equipped with a star shaped piece of wood covered with flannel and this does a better job.

Replacing Long Draft Aprons

With A. H. Randall of Alabama Mills, Birmingham, leading the discussion, the subject turned to spinning problems. The first question was "What method do you use in determining when leather aprons on long draft spinning need replacing? Do you do anything to increase the life of the apron? Are best results obtained from straight cut or bias cut draft aprons?" Two men reported determining time to change aprons by observation at time of overhauling, and do nothing to increase their life. John Hampton of Fairfax (Ala.) Division of West Point Manufacturing Company, said that he has tried increasing the life of the aprons by treatment, and it does some good by preventing a certain amount of cracking, but it requires too much time inasmuch as the frame must stand while the aprons dry, so he has dispensed with it. He said that the frames are gone over twice yearly and the aprons are checked. Worn ones are taken off and those that are good are used as replacements, by moving them down on each frame. He finds that about 30 per cent of the aprons can be used further after the inspection.

Another member said that they do nothing to treat the aprons but go around about once every 8 months, take frame down and put new aprons on and use those aprons that are in satisfactory condition on the last few frames that are overhauled, thereby keeping all of the used aprons in one section of the room. He cuts the top apron on the bias and the bottom apron straight.

Someone asked for a satisfactory glue, since the mill has to use clamps to hold the aprons together until the glue dries, and Mr. Hampton said that he has found one that will dry in about two minutes (name on request) and is perfectly satisfactory.

Another man reported using the bias cut and believes that he gets a longer life by this method. If one of the bias cut aprons breaks or stretches, he uses a straight cut apron for repair.

Oiling Spinning Frames

"How often should bolsters be oiled and what viscosity oil should be used? What is the suggested schedule for oiling top rolls on long draft spinning, no wick?", was the next spinning question. It was agreed by the chairman in the beginning that they should be oiled when needed, but he asked for mill experience and practice. Mr. Hampton oils his spindles once a week of 120 hours running, and suggested that this be done when the frame is standing, on Saturday or Sunday, in order to allow the oil to seep into the bottom of the base. He said that if the frame is oiled when running; all the lubricant will not reach the base and much of it will be syphoned out and slung off. He also suggested that the oiler use an oil spout that is very small so that the work cannot be done too fast or again the oil will not reach the bottom of the base.

The experience at Tallassee Mills follows: "Spindles should be oiled when approximately 20 to 25 per cent of a full base has been consumed. On the most recent test conducted along this line our 2½-inch ring spinning frames consumed 20 per cent of a full base in two 6-day weeks or 288 running hours. We oil all of our spinning and twister spindles every two weeks.

"Some of our twisters consume up to 32½ per cent of the oil in this time but we have not experienced any difficulty thus far.

"We use a spindle oil with a viscosity of 100/105 at 100 degrees F. on all spinning, including filling. We were using a lighter oil with viscosity of 58/60 at 100 degrees F. until recently when we changed to the foregoing set up. The lighter oil would be satisfactory on new spindles and bolsters but as these age we find that we get better results with a heavier oil.

"The periods between oiling on top rolls naturally will vary with different oils and different room temperatures,

cleanliness of frames, etc. Actually the correct answer to oiling top rolls is to oil them just before they need it. When one waits until the rolls are dry the spinning is already running bad.

"Under our plant conditions we have found that our front top and steel rolls definitely do require oiling twice as often as the middle and back rolls. We are having satisfactory results with the following oiling schedule: Front top and steel rolls every 48 running hours; middle and back top and steel rolls every 96 running hours.

"We do not find a great deal of difference in oiling with or without wicks. This is due to the fact that when the wicks are removed the oil chambers fill with waste which serves as a wick. As a general rule we prefer saddles without wicks.

"On long draft spinning with revolving front clearers accumulation of lint on the clearer spindle will wipe up the oil in a very short time. Consequently, in order to get maximum results from the oil put on the saddles it is necessary to keep the spindle of the revolving clearers clean. We find it necessary to remove the lint from our clearer spindles every 8 hours.

"The best results are attained by oiling top rolls immediately after the rolls are picked."

In answer to questions, the man giving the foregoing report said that they do not stop the frames when oiling, but when overhauling they flush out and wash the spindles with mineral spirits.

Other opinions and practices on this question given were: (1) "We oil top front rolls every shift and oil the back and bottom rolls once a week". (2) "We oil spindles every week and in addition stop the frame every two months and raise the spindle and pour oil in the base."

Machine To Oil Spindles

Someone asked for experience with a machine to oil spindles and Fred Phillips said that he has seen one and likes it very much. It is portable on wheels and drains and refills spinning and twister frame bolsters in one operation. Oil from the bolsters is filtered, all ferrous material removed and can be used again. It puts in the correct amount of oil so that it is impossible to over-fill the bolster. Other men present reported having seen the machine and thought very favorably of it.

Training Spinners

The next question asked for methods of training spinners and section men. John Hampton told of taking two girls (in pairs) and putting them with his best spinner on one frame for two days where they are shown every operation that a spinner must perform. After this one of the new girls is put with a good spinner on her regular sides to work with her, the new operative taking additional sides as she becomes more capable. In two weeks time the new operatives must be able to handle one-half a job, so the two new girls are put on one full job. No new girls are trained until these two are able to run a full job.

As for training section men, Mr. Hampton uses his oiler when the section man is out. He receives help from the overseer and from the other section men, and also assists the regular section man when he has time.

Harold Clark of Avondale Mills told of having a building about a mile away from the mill. Spinning frames and winders are kept there and an experienced mill operative is on hand to teach spinners, winders and doffers for a 4-weeks course. The students are not paid for this work. After having had this course the students learn much faster when coming into the mill.

Another mill's system for training doffers is to put a new doffer on the third shift with a spinner for several nights so that he can learn to put up ends, and then he is put with a doffer doing nothing but piecing-up after the doffer. After this training he begins actually doffing, and in about six weeks he is able to make production on the job.

Someone wanted to know if Mr. Hampton could actually teach a spinner to run a job in two weeks, and he answered in the affirmative, but said that some of the learners fall by the wayside. He was asked what he considered a "half job" and Mr. Hampton said that a full job consisted of 20 sides on warp, running 17.50s, with the spindles averaging 210 per frame, and ends down 40-45 per 1,000.

Lightweight Spinning Tape

"What advantages result from use of lightweight or thin tape over the regular tape." Clyde Brown of Langdale said that it increases the spindle speed and lowers the power cost. There is a difference of two horsepower on the 4-frame drive when using the lightweight tape. Speaking for Martha Mills, Thomaston, Ga., a member said we have run tests and we now have all spinning on lightweight tape. The reduction in power will justify any disadvantages noticed. He cautioned, however, when using the tape, since the spindle speed is increased some compensation must be made in the twist gear.

Mr. Floyd said that he went into this subject a number of years ago and at that time they got better life and the cost was lower with the lighter tape.

At this point Roscoe Roberts of Lincoln Mills described a new method of sewing spinning tapes that he had seen, and that was said to be giving excellent results. Mr. Dunlap told of tape that can be purchased that is half as thick at the point to be sewed, thereby eliminating a heavy lap at the place of sewing.

Cleaning Ringrails

The next question asked for methods of cleaning ringrails. One man said that they clean the rings with a steel brush, and when turning the rings over to use the other side, they notch the used side, send the rings to the manufacturer to be burnished, and then the rings are tumbled for 16 hours with pumice stone and leather.

Mr. Hampton takes the ringrails off every five years and boils them with a chemical he secures from the bleachery, dries the rings and rubs them with Spanish White. Also, he gaps the rings when they are to be turned so there will not be old rings scattered throughout the room. Homer Roberts of Avondale Mills told of taking the ringrails off and boiling them in a trough containing lye. This cuts the dirt and grease and leaves the rings in good condition. Someone asked if boiling damages the rings and the answer was that it does not.

Life of Rings and Travelers

In a discussion of life of rings and and travelers, John Hampton said that he does not get such good life from his rings now, and wondered if it could be caused by the oil being put on the cotton in the preliminary processes. No one else present thought so. He runs his travelers for 72 hours on 17½s yarn.

A member said that the life of his rings was 10 years, but that the life of his present rings is about 8 years, and he is now having them reburnished. He overhauls every year.

Mr. Hampton then brought out that when a ring is turned over, the bottom side will not wear as long as the top side did.

Another member reported that on 2¼-inch ring, traveler speed 1¼-mile per minute, running 90 to 98 hours per week, he changes every three weeks, on 20s to 25s. Other reports given were that the travelers last 20 days, running 6 days a week, two shifts, which amounts to changing every three weeks and two days on 30s and 40s. It was brought out that as rings wear it is necessary to put on heavier traveler and a larger circle.

Textile Machinery Producers Discuss Price Control with OPA at Washington Meeting

ON DECEMBER 8 and 9, representatives of the textile machinery industry met with those of the OPA in Washington to discuss the very important question of price control. The manufacturers of preparatory and productive machinery met on Monday, December 8, and the manufacturers of finishing machinery met on Tuesday.

All present seemed keenly aware of the absolute necessity for restraining inflation, but there was a very widespread expression of opinion that any attempts to stem the progress of inflation must include ceilings on the prices of labor and farm products as well as on machinery. To attempt to put a ceiling on machinery prices while leaving the price of labor entirely free from control would be like trying to stop a leak with a handful of sand.

The OPA of course has no jurisdiction over wages or farm products. A bill is now pending in Congress aimed at regulating prices, but as of the date of this meeting, this bill had not taken any tangible form and it was impossible to tell how much real regulating could be expected.

Those present at the meeting seemed uniformly willing to co-operate in every possible way with the OPA in keeping prices down to reasonable levels, and there were several manufacturers represented who were in the embarrassing position of having recently granted wage increases without having yet increased selling prices to cover the additional costs imposed by the wage increases. In cases of this sort application would be made to the OPA for a special dispensation to increase prices as much as might be justified and absolutely necessary.

Various methods of effectuating price ceilings were discussed and it seemed to be the overwhelming sentiment of those present to follow a method of voluntary compliance, whereby each manufacturer would notify the OPA at stated intervals that he was complying with the price ceilings agreed upon.

Informal discussions between groups of delegates at the lunch hour kept constantly bringing up the question of a ceiling for farm prices and wages. It was repeatedly emphasized that the farm bloc in Congress was bringing tremendous pressure to bear to inflate the prices of farm products, and that constant increases in the prices of foodstuffs and cotton would necessarily destroy any attempt to maintain a ceiling on manufactured goods affected by these increases. The only way, therefore, to hold down the spiral of inflation would be to put a ceiling on everything and then only permit modest increases in prices here and there as might be justified by special conditions in various industries or in units of various industries.

This meeting was held in a friendly and co-operative spirit, and the representatives of the OPA were at pains to make it clear that this agency of the Government was most anxious to co-operate in a helpful and friendly way with manufacturers likewise disposed toward the Government. Everyone present seemed to be anxious to co-operate in every possible way, and informal conversations between those present showed clearly that the events of the preceding 24 hours in the Far East had had a profound effect on everyone present.

Several influential leaders of the textile machinery industry privately expressed the opinion that we had nothing to fear from our enemies and that nothing but internal dissension and, above all, inflation, could offer a serious menace to the nation. In statements made during the course of this meeting, as well as in private conversations between those present, the question of inflation was constantly to the fore and seemed to be the principal fear of all present.

At this time, the price control bill is not expected to be taken up before January, and there is little hope of action before February. In the meantime, inflation is steadily encroaching on the national income, and will continue to encroach at a rapid pace until definite and stringent steps are taken by Congress and the people to curb inflation.

Manufacturers generally through the United States were reported as being almost unanimously in favor of inflation control, and were overwhelmingly supporting the OPA efforts to prevent run-away prices. All seemed to feel, however, that the cause was a hopeless one if farm and labor prices could not be controlled. Several representatives of industry pointed out at this meeting that 50 per cent to 60 per cent of every sales dollar represented labor cost, and that consequently a relatively modest increase in labor cost would wipe out any possible profit, and a fairly stiff increase in labor cost would immediately cause an operating loss.

It was brought out that quite a number of textile machinery manufacturers were now doing a great deal of direct defense work and that a large percentage of their machinery had been withdrawn from the manufacture of textile equipment and put on other production. A representative of the Quartermaster Corps was present and here pointed out that while the Army was most anxious to get all possible production that textile machinery plants could devote to direct defense work, the Quartermaster Corps was also vitally interested in seeing that the machinery industry was not diverted from its normal production to such an extent as to hamper textile production which is so absolutely necessary for supplying the armed forces with a tremendous variety of materials.

The meeting adjourned with a general agreement to hold prices down unless special dispensations were given by the OPA, and apparently with the fervent hope on the part of all present that Congress will soon take some definite steps to support the present voluntary efforts of industry in the maintenance of stable prices and the avoidance of inflation.

Flannel Manufacturers Standardize

In line with defense plans to simplify production in order to increase output, producers of cotton canton flannels and work glove manufacturers at a meeting held at The Cotton-Textile Institute under the auspices of the National Bureau of Standards of the Department of Commerce voted unanimous approval of the following propositions:

That all canton flannel weights lighter than 6 ounces be eliminated; that 9-ounce 4-harness flannels be retained in the standard list; that the standard list of 10-ounce and heavier weights be confined to 10-ounce and 12-ounce weights in both 4- and 5-harness constructions and 13-ounce weight in a 5-harness construction; and that 11 and 14-ounce weights, in both 4 and 5-harness constructions, be eliminated entirely.

That the width of all unbleached canton flannel sold as such for the glove trade be confined to 34 inches in all weights and constructions; that all fractional ounce weights be eliminated; that the simplified list of standard weights and constructions, if approved, be made effective with respect to new production on and after April 1, 1942.

CURRENT TEXTILE TOPICS

New goals under war

FOREIGN AGGRESSION, led by the treacherous Japanese action of December 7, automatically changed the economic position of the United States. In that change, the cotton manufacturing industry was just one branch of all American production committed first and last to an all-out effort for annihilation of totalitarianism in the world.

Defense had already exacted extraordinary responsibilities among industries, with the cotton mills for their part constantly more and more pressed to meet the military demands. Yet the goals set by the government under defense were immediately relegated to the past by the declarations of war. This was reflected in pushing ahead of government requests for bids on textiles, both cotton and wool, along with other war business.

Thus the year 1942 opened with exhausting demands upon spindles and looms, beyond the unprecedented production of the previous year. The condition of war brought into call some fabrics for new civilian uses, conspicuously black-out goods. Yet mechanical problems of production, after the strain of last year, and the pressure upon skilled labor are a forecast of adjustments to an entirely new basis.

Wartime needs in new variety

Within three days after the start of war, the request for 37,750,000 yards of cotton goods from the Army Depot, involving deliveries over periods of 150 to 270 days, was a start on heavier government buying that the trade foresaw immediately. Significant in this connection was the fact that the government recognized the already tightly sold position of some lines and the need to accept slightly different fabrics to insure prompt deliveries.

On the civilian side, meantime, the actuality of war had a spectacular reaction in calls for black-out fabrics. This started thoughts of the trade along the line of other new demands, such as gas-repellent cloth. Even adhesive tape for windows, as a protective measure, was among the items under consideration as the public viewed the remote as well as definite circumstances.

Prospects for larger armed forces and more equipment for personnel were only one phase of the military demands. As an example of new uses, it was forecast that heavy yardage of goods would be necessary for camouflage cloths to conceal gun emplacements.

Mill expansion now difficult

While the industry thus faces new requirements, the expansion of mill output seems to have reached about the limit. Even though a rate of about 11,500,000,000 yards annually (December estimate) was achieved last year, or 20 per cent higher than ever before, the capacity of the industry is thought to be inadequate to the demands that are indicated for 1942. That obviously means shortages in civilian goods.

As to mechanical facilities, it was noted near the end of the year that active machinery in October had reached 132.5 per cent of two-shift capacity. This left only 17.5 per cent more for realization of theoretical capacity. Allowing for the fact that such a high rate was not sustained throughout 1941 and for some additional equipment that might be made available, it is figured that some gain might be made this year.

Marginal equipment that could be brought into effect under the prevailing price conditions at the end of 1941, however, was considered small. Replacement parts, moreover, remained a problem and new machinery has appeared to be out of the question. Above all, the outlook for maintenance of adequate production personnel under a war status is a serious factor. The call for skilled workers in primary war industries, in addition to the conscription for the armed forces, creates a crucial labor situation.

All industry in new order

Merchandising of a new order has developed for nearly all divisions of business under the turn of events in December. The broad activity that provides income on a larger scale than for many years affords the public a larger purchasing power against a constantly shrinking production of goods for civilian buyers. As stated, the economic position is accordingly established on an entirely new basis, for industrial products.

In cotton goods and other lines, however, an adjustment of ideas will counteract in part at least the difficulties in civilian trade. Early in the defense program, some talk was heard of simplification and standardization of production. That process now becomes a paramount element in production. It merely means that producers must confine output to the lines most economically manufactured in volume.

Here is the opposite to the wonted condition of a surplus production in the cotton goods industry. Instead of striving to induce consumption by resort to ingenuity in variety of constructions, the mills now must make the most of their facilities to reach a volume of standard quality and durability. The new fundamentals are simplification and economy of production.

Improving data situation noted

Much clarification of the statistical position in gray goods was announced as a result of statements issued by the Association of Cotton Textile Merchants and the Print Cloth Group at the start of December, or just before the war broke out. One thing disclosed was that print cloths now comprise nine per cent of all yardage, as against 16 per cent in 1937. This disclosure, incidentally, seemed to quiet charges of hoarding by print cloth mills.

At the same time, it was adduced that statistical data was still inadequate. One obstacle to the collection of mill figures in various groups seems to be that no good purpose would be served the producers without co-operation from converters and distributors in comprehensive data.

For a long time, the matter of statistical information has been thrashed back and forth. It is highly essential in these days of stress, but the trade points out that full benefit depends upon completeness; that is, information covering both producers' and distributors' position.

New England Mill Situation

MILLS IN the New England district approached the close of the year 1941 with hopes or expectations of an end to the confused situation in fine combed constructions. They entered the war period with the price problem still unsolved, but the new conditions made it essential on the part of government as well as the industry to clarify matters hampering distribution. Thus by mid-December the trade was

looking to establishment of the new scales before New Year's.

While production of the northern mills maintained a strong rate through the last quarter of the year, the marketing of goods for many weeks was obstructed by arbitrary ceilings. The outbreak of war found this condition continuing, yet it was quickly apparent that the requirements of the government would involve a larger share of production in New England as well as elsewhere.

In order to relieve the trade, pending the final action on prices, the OPA issued an official order permitting the sale of yardage on memorandum orders. Any idea that mills had been accumulating substantial yardage through the period of slow fall trading was contradicted when it was found that supplies available against memorandum orders—or orders subject to prices when the new ceilings are set—were far from adequate to the demand.

Changed position in all-out effort

Prompt notification of new concentration upon production toward an all-out effort in the war, meantime, was received by the mills of this section. Mill men apprehended a larger call from the government for combed cottons and at the same time they were told that production must be changed where necessary to meet government requirements.

This obviously indicated further encroachment upon civilian production, except insofar as mill output may be further expanded. The talk of work around the clock in plants on government requirements promises new highs in the cotton manufacturing industry together with other production. This was a matter involving State laws and labor in this district, especially in the dominating northern mill commonwealth of Massachusetts.

Steps were taken at once in the Bay State, however, to co-operate with President Roosevelt's urging of the seven-day week and 24-hour day. James T. Moriarty, State Commissioner of Labor and Industries, announced that the Massachusetts laws limiting the length of the working day and week would be suspended upon request of producers of war materials.

Raw cotton use well sustained

An emergency meeting of the Massachusetts branch, AFL, was called to endorse the full week, in addition to a broad program including mediation and conciliation of all disputes with employers. The war outbreak also led to an abrupt stop to a threatened strike of loom fixers in Fall River. This had threatened to throw 15,000 persons out of work.

Latest figures on cotton consumption in New England, covering November, show some diminution from the big October volume for the shorter month with its holidays. The number of active spindles reflected a well sustained operating rate, however, at 5,011,340 in November against 5,013,310 in October. Thus activity was held at approximately the peak for this district over the past 12 years or so.

Cotton consumption was reported by the Census Bureau at 99,122 bales for November, compared with 119,319 for October and only 83,005 for November of 1940. This brought the total for eleven months of 1941 to 1,151,966 bales, against 840,303 bales a year previous. The indicated gain for 1941 over 1940 was more than 37 per cent.

More than 5,000,000 spindles have been active in this area since April. The number in place at the end of October was only 5,635,214, showing a very high percentage in operation and only moderate leeway for the needed further expansion. However, the number of average hours per spindle evidently will be showing further gain.

From October, 1940, to the same month in 1941 this average was lifted from 321 to 373. The smaller number of hours in 1940, moreover, was on only 4,848,572 active spindles. In June, 1940, the defense program was just getting under way and New England mills showed 4,512,164 spindles active an average of 204 hours.

"THE SITUATION" as Seen Across an Executive's Desk

December 17, 1941

War

DECEMBER 7, 1941, has become a red-letter day in our history. On that day Japan displayed the most disgraceful and diabolical attitude that any nation has ever shown since civilization has been recognized.

While peaceful negotiations of differences were being considered, Japan violated every ethic of international morality and struck stealthily and premeditatedly at Pearl Harbor in the Hawaiian Islands, murdering more than 2,700 men and officers in our fighting forces. Several ships and airplanes were disabled and destroyed.

On December 8, the United States declared war upon Japan and the nation responded with a united patriotic reply. Perhaps at no time in the history of this nation has there been such unity. The entire nation has resented the "stab in the back" given by Japan.

On December 11, the United States declared war on Germany and Italy, thus completing the cycle of important belligerents. A grim and determined nation thus stepped out from its neutrality into the arena of war with a firm trust in its righteousness and a belief in ultimate victory. This war will affect the life of every person in this nation.

The cotton-textile industry up to the present time has met every demand gladly and patriotically. It has met defense demands and civilian demands, although they have been greater than at any period in the history of the industry. Nearly eleven million bales of cotton have been consumed in supplying the demands.

With an army of 1,500,000 people expanding to 4,500,000 and war equipment expanding likewise the demand on the textile industry for 1942 will likely exceed 1941. The textile industry more than ever wants to do its part but there are several things disturbing it.

Workers

In the increase of the army and as hostilities become more acute, many men now working in the textile industry may volunteer, some may be demanded by the draft, others may shift to what they may consider more lucrative positions. There will be a need for more workers in any expanded program that is sure to come about.

There is a great need for opportunity of (1) training new workers, (2) training workers, already qualified for one job, for other jobs which may have to be filled or for promotional jobs within the plant.

The rules and regulations of the Fair Labor Standards Act are very cumbersome and for many mills very impractical in their applications. It seems to us that in this emergency, the Wage and Hour Division should be more liberal than it now is in order that an orderly and systematic quota of workers may be available to carry on.

Repairs and Equipment

While supplies for repairs and equipment so far have not been a very serious problem, there has developed enough trouble to indicate that in the new demands that will be made for the execution of the war, supplies for repairs and equipment, dyestuffs and other necessary materials may be quite serious. The cumbersome paper

route, the confusion as to procedure in meeting government requirements, are also perplexing and delaying.

Ceilings

The price-fixing legislation is quite disconcerting to all business, and this means the cotton-textile industry. No one wants inflation because all men know the terrific consequences arising therefrom. There is bound to be a natural rise in the cost of living and in the cost of production. Arbitrary price fixing, or the freezing of prices can be very disastrous to the production program, as well as to the financial position of the industry.

Taxes

The new tax bill is disturbing, not that industry does not want to pay its part in the carrying on of this war, but unwise taxes can confiscate. Senator George of Georgia has said that a nation can confiscate only once, but with a wise tax program, it can continue indefinitely. This war is too great to try to "pay as you go" or even for this generation to pay for. A tax program must be written that will carry within its provisions a right for industry to live and grow and stay healthy financially and otherwise. There must be great care taken so that there is no confiscation. Ceilings and taxes have a strong influence upon the future life of America.

October Cotton Consumption

Consumption of cotton during October, totaling 954,000 bales, was the largest for any month on record, and was equivalent to an annual rate of 10,600,000 bales. The daily rate during October amounting to 41,700 bales per day, also was a record figure, according to the report, and compared with 40,200 in September and 40,700 in May.

The Hosiery Situation

The swing away from all-silk full-fashioned hosiery into rayon, cotton, nylon, and various combination constructions gained momentum in October, according to shipment figures just released by the National Association of Hosiery Manufacturers.

The breakdown for full-fashioned numbers, compared with September, follows (figures represent dozens of pairs): All-silk, 1,178,157 in October, 1,671,960 in September; silk leg with rayon or cotton welt, 1,531,815 in October, 1,127,044 in September; nylon, 546,172 in October, 700,261 in September; nylon with cotton or rayon welt, 339,299 in October, 130,657 in September; rayon, 187,071 in October, 62,725 in September; and cotton, 90,674 in October, 39,094 in September.

The total of all October shipments was 14,971,350 dozen pairs, with 3,899,818 dozen pairs of full-fashioned, and 11,071,532 dozen pairs of seamless. Due to a very large increase in seamless shipments, both this category and the grand total are records for the month, although full-fashioned shipments were substantially below a year ago.

Power Shortage Threat Removed

The threat of a power shortage in the Southeast and the resultant possibility of curtailment of mill operations were dispelled late last week when OPM lifted restrictions of power consumption following general heavy rains throughout the area.

Restrictions lifted included the black-out of many non-essential lights and the freezing of industrial power use at September levels.

As a safeguard, the 13-state power pool, which has been bringing 42,500,000 kilowatt-hours per week into the Southeast, will remain operative during December.

New Rayon Record

With a production of 114,200,000 pounds in the third quarter of 1941, the U. S. rayon industry set a new quarterly record, compared to 112,000,000 pounds the second quarter of the current year and 93,000,000 pounds the third quarter of 1940.

The gain is attributable to increased production of viscose and cuprammonium yarns, in turn made possible by an increase in the average denier of yarn. The slight drop in acetate production is attributable to an opposite trend in denier size.

Wage-Hour Stand on Guards and Watchmen

The Federal Government, states, counties, municipalities or other political sub-divisions of States are not "employers" under the Fair Labor Standards Act; and men hired as guards by States or political sub-divisions of states during the war emergency may be employed without respect to the requirements of the Wage and Hour Law, it was announced today by Baird Snyder, acting administrator of the Wage and Hour Division, U. S. Department of Labor.

Where employers other than the political sub-divisions of states above mentioned, either employ additional guards or, because of the lack of available man-power, lengthen the hours of guards already employed, the wage paid to such guards as are engaged in interstate commerce or in the production of goods for commerce, must meet the minimum requirement of 30 cents an hour—that is, $12 for a 40-hour week—unless a wage order sets a higher hourly rate (not over 40 cents an hour or $16 a week) for the industry. Time and one-half the hourly rate must be paid for hours worked over 40 each week. Guards or watchmen hired by employers who are in commerce or producing goods for commerce, and whose work it is to protect such activities conducted by their employers, are subject to the Fair Labor Standards Act, the Courts have held, even though they do no productive work.

Priorities

The new and simplified form for securing priorities on essential products is PD-25A. On this form the applicant will show the kind and volume of products he has been making, the priority rating of orders he has filled in a recent quarter, the destination or end use of his products and the inventory of materials which he has on hand, together with his anticipated materials requirements for the next calendar quarter.

In determining what priority may be granted to the applicant, the Priorities Division will take into account (1) the amount of defense or civilian production involved, (2) the end-use of the products, (3) the materials required for production, (4) the overall policies of SPAB and (5) the recommendations of the appropriate industrial branches of OPM.

Osborne Heads Factoring Division of Trust Company of Georgia

Jasper C. Osborne has been made factoring division manager for the Trust Company of Georgia, Atlanta, Ga., effective January 1, it is announced by Marshall K. Hunter, vice-president of the bank in charge of the division.

For eight years Mr. Osborne has been associated with Crompton-Richmond Co., Inc., textile factors in New York City. His early business experience was with the National Credit office, and his training includes accounting and business law. He has served actively in the New York Credit Men's Association, and in the Uptown Credit Group, an affiliation of the National Federation of Textiles.

The factoring division of the Trust Company of Georgia was founded in 1939 as one of the more recent financing developments of the company, which has been established more than 50 years and is one of the leading financial institutions of the South.

"Fourth Shift Answer to 168-Hour Week"

Four-shift operation will solve the problem of the 168-hour work-week and get victory production out of the American industrial machine, says Baird Snyder, acting administrator of the wage-and-hour division. President Roosevelt asked for seven-day operations of defense industries, and the division has had many inquiries on how the President's call for a seven-day week, 24 hours a day, can be best met under the Fair Labor Standards Act, which requires that overtime be paid after 40 hours a week.

"There is nothing inconsistent about the 40-hour shift and continuous operation," said Mr. Snyder. "Many continuous operation industries—such as open hearth steel furnaces, electric power houses, rayon yarn factories, and transportation organizations—have operated for years on a four-shift basis.

"Since the President's request of June 1940 for maximum defense production, several alert manufacturing organizations have scheduled continuous operation of their productive machinery through the four-shift system.

"Planning a four-shift system is a very simple matter. In a typical 40-hour week, continuous-operation schedule, three shifts work regular eight-hour tricks five days a week, accounting for 120 of the 168 hours in the week. The swing shift works the remaining 48 hours on a staggered basis. Some manufacturers work the swing shift 40 hours and use the remaining eight hours for re-conditioning the machines.

"The swing shift does not work the same days nor the same hours each week, but after three weeks it is right back where it started. Schedules are usually laid out in three-week cycles.

"We have distributed typical 168 hour-work-week schedules among our offices. Our inspectors examining payroll records are being instructed to show any manufacturer who is interested how he can go on a four-shift continuous-operation basis. We realize that these schedules may not be practical in many operations. Laying out a schedule is easy. The difficult thing is to train additional foremen and more skilled workers. The defense manufacturer who has not been training more foremen and workmen has not been doing a full job. The Wage and Hour Law with its penalty of time and one-half after 40 hours has been forcing the training of supervisory personnel and skilled workers for additional shifts since the start of the emergency."

Two of the typical schedules distributed by the Division are shown below.

SCHEDULE I

SHIFT	SUN	MON	TUE	WED	THUR	FRI	SAT
12 Mdt— 8 AM	D	D	D	D	D	C	C
8 AM — 4 PM	C	B	B	B	B	B	X
4 PM —12 Mdt	A	C	C	A	A	A	A

SCHEDULE II

SHIFT	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
12—8	B	C	C	C	D	C	C	C	A	A	A	D	A	A	A	B	B	B	D	B	B
8—4	A	A	A	A	A	D	X	B	B	B	B	B	D	X	C	C	C	C	C	D	X
4—12	D	D	B	B	B	B	D	D	C	C	C	C	C	D	D	D	A	A	A	A	D

Period X is used for reconditioning machines.

Timely News Items with a Textile Slant

Emmons Loom Harness Company, Lawrence, Mass., has announced the appointment of A. Polak, Caixa Postal, 362 Rio de Janeiro, as agent in Brazil, and C. E. Halaby & Company, P. O. Box 139, Medellin, as representative in Colombia, South America.

DuPont has made known that a further 25 per cent expansion of its nylon yarn capacity to 20,000,000 pounds yearly, at normal deniers, has been authorized. This will be effected by adding 50 per cent to the present yarn-producing capacity at Seaford, Del., and by rounding out facilities at Belle, W. Va., for the manufacture of nylon intermediates.

Bunting Brass & Bronze Company has removed the office and warehouse in Atlanta, Ga., to 542 Spring St., N.W., and the Kansas City sales offices and stocks to 1821 McGee St.

Tesco Chemical Company, P. O. Box 4748, Atlanta, Ga., is the successor to the chemical division of International Agricultural Corporation. Lee Baker will continue to contact the textile industry on Tesco textile products, which include the pH control group for scouring, finishing and wetting out.

Diamond Alkali Company of Texas has completed construction of a new plant at South Lamar and Lenway Streets, Dallas, Tex. The plant was built to supply the increasing demand for silicate of soda and silicate products in the Southwest. Diamond purchased early last year the Gulf Coast Chemical Company, and will continue to operate it as a division of the company.

E. F. Houghton & Company, Philadelphia, Pa., to mark the completion of its new, ultra-modern office building, held open house for stockholders and customers on December 11. The 3-story structure combines all modern features, including glass-block construction and air conditioning.

Rayon Yarn Figures

November shipments of rayon filament yarn in the United States registered a decline as compared with October, records compiled by the *Rayon Organon*, published by the Textile Economics Bureau, indicate.

Shipments for November approximated 38,600,000 pounds as compared with 41,700,000 pounds produced in October and 34,800,000 pounds in November 1940. The decline in shipments last month chiefly reflected the fewer number of working days in November as compared with October, although the lowering of the average denier spun by producers likewise acted to reduce the poundage output in November.

For the eleven months ended November 30, domestic shipments of yarn totaled 413,300,000 pounds as compared with 354,700,000 pounds in the corresponding 1940 period, an increase of 17 per cent. Stocks of rayon yarn held by producers on November 30, including reserves held under Government order, totaled 4,500,000 pounds as compared with 5,400,000 pounds reported at the end of October.

In its annual survey covering the present and planned capacity of the United States rayon industry, the *Organon* states that the operating capacity of the filament yarn industry as of November of this year is 450,000,000 pounds annually, and a total annual operating capacity of 470,000,000 pounds is anticipated by July 1942. By March 1943, tentative industry plans indicate an operating capacity of 475,000,000 pounds. In November 1940 the operating capacity was 395,000,000 pounds.

For staple fiber, only the data on installed capacity is available. This data shows that the current installed capacity is rated at 150,000,000 pounds annually and that no additions to capacity are contemplated over the period of the next eighteen months.

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Who will never ask for a raise?

Enlist the services of *ready cash* through the Factoring Division of the Trust Company of Georgia.

Dollars work for you . . . to buy raw materials at a savings . . . to earn discounts . . . to meet payrolls, pay taxes . . . dollars work for you to provide adequate working capital . . . and a dollar never asks for a raise.

You may find our Factoring service to be the answer to your financial problem. Write NOW to

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TRUST COMPANY OF GEORGIA

ATLANTA

What the Textile Mills Are Doing

The entire capital stock of Pomona Manufacturing Company, Greensboro, N. C., has been acquired by William Ockrant and J. Robert Orton of Cincinnati, Ohio. New plan of operation will have Mr. Ockrant as president, Myles A. Bearden as vice-president and general manager, and J. Robert Orton as treasurer. The new owners will operate the 25,000-spindle plant on an enlarged basis, with no changes of personnel. The mill produces yarns, dress goods and suiting.

T. T. Leonard and Christian Peterson, Silverton, Ore., are reported to be heading a project to construct and operate a flax mill at Silverton. The building will be a one-story structure costing approximately $35,000 with equipment.

Andre Spinning Company, Inc., Pawtucket, R. I., has been chartered with a capital of 1,000 shares of stock, to operate a cotton mill. W. J. Forcier and J. Oscar Tessier, 79 Wood Ave., Woonsocket, R. I., are principal incorporators and heads.

Avondale Mills, Sylacauga, Ala., have installed two new Morton system horizontal beam dyeing machines in the Sylacauga and Alexander City plants. Avondale Mills have a total of 19 Morton dyeing machines in the plants.

Payson Products Company, Inc., Rockland, Mass., is a newly incorporated $100,000 organization which will operate a mill for the production of cotton and woolen fabrics. Lewis H. Parks is president and E. D. Peabody is treasurer.

Fabricspray, Inc., Long Island City, N. Y., has been organized to operate a textile finishing business, and has leased a new one-story building at 38-11 Tenth Street, which will be equipped.

City Cotton Mills, Newton, N. C., have been reorganized as New City Mills, with Julius W. Abernathy as president and J. A. Moretz of Hickory as vice-president and general manager.

Hamilton Woolen Mills, Inc., Yantic, Conn., recently chartered, have taken over the former mill of the Millbrook Woolen Mills, Inc., Yantic, and will occupy, continuing the same line of production.

Bradford (R. I.) Dyeing Association, operating a bleaching, dyeing and finishing mill, will build a one-story addition to be used for storage and other service. It will cost about $35,000 with equipment.

Jefferson Mills, Pulaski, Va., plan to double the capacity of the present plant and remodel equipment. New installations include four new slashers, 50 new coning machines, 10 twisters and accessory equipment.

The Ariguanabo textile interests, Bauta, Cuba, are modernizing the mill and finishing plant equipment. 400 looms of a 1,000-loom order will soon be installed, and the remainder as soon as possible.

American Yarn Processing Company, Mt. Holly, N. C., has installed new machinery in the card room and has constructed an addition to be used as a twister room at the Woodlawn plant.

Flax Processing & Linen Company, Greystone, R. I., has established a plant for linen thread, using wet-process spinning, said to be the first plant of this type in America.

It is reported that the Mercury Mills of the Martel Mills, North Charlotte, N. C., is to be sold to R. Horace Johnston, head of Johnston Manufacturing Company.

Chicopee Manufacturing Corporation, Chicopee Falls, Mass., will build a one-story top addition to the present 3-story plant, 43x48 feet, and include improvements in the present structure.

Preliminary plans have been made by the Eldorado (Tex.) Woolen Mills for a new one-story plant at Del Rio, estimated to cost over $85,000 with equipment.

David Cummings is reported to have purchased the Valentine Mills, Bennington, Vt., and to have started operations manufacturing yarn.

National Worsted Mills, Inc., Falconer, N. Y., will build a one-story addition to the plant, reported to cost $50,000 with equipment.

Davidson Cotton Mills, Inc., Davidson, N. C., have installed a fourth Morton dyeing machine, installed by Morton Machine Works, Columbus, Ga.

Western Shade Cloth Company, Chicago, Ill., has erected a powerhouse costing approximately $45,000 with equipment.

Hathaway Manufacturing Company, New Bedford, Mass., will build a 3-story addition to cost $60,000 including equipment.

Ruby Cotton Mills, Gastonia, N. C., has installed a Lummus Gyrator and other machinery in the picker room.

Unity Dyeing & Processing Company, Philadelphia, Pa., is now dyeing cotton yarns in skeins, cotton tapes, etc.

Arkwright Mills, Arkwright, S. C., are installing additional cards and a new boiler unit.

Dallas (Ga.) Mills have installed 12 Whitin spinning frames and other equipment in the spinning room.

Lavonia Manufacturing Company, Lavonia, Ga., has installed a new Morton raw stock dyeing machine.

New Textile Publications

Brown Instrument Company, Philadelphia, Pa. Catalog No. 8301, "Industrial Control Devices", a 56-page two-color catalog for those interested in learning how production may be increased, cost lowered and quality improved. Written for engineer and layman.

Railway Express Agency, Inc., 200 Park Ave., New York City. "Ship the Skyway", a folder providing information on low air express rates.

General Electric Company, Schenectady, N. Y. GEA-3660 explaining in detail the design, construction and application of the new 2300-volt contactor motor starter which can be safely applied to high-capacity power circuits. GED-972A giving the complete story on Thy-mo-trol, the electronic control system for the operation of direct-current motors from alternating-current lines. GEA-3680 descriptive of the recording photoelectric spectrophotometer for the graphic measurement of color. Order by number.

Allis-Chalmers Manufacturing Company, Milwaukee, Wis. "Patent Background for Engineers", a 54-page booklet designed primarily for engineers and executives who deal with inventions. Written by engineers and patent attorneys for the lay mind.

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa. Booklet B-2280 recommending floodlighting practice for nighttime production and protection. Folder F-8623 describing fractional horsepower motors from ⅛ to ½ hp., 145 frame size for general use. "Quick Selector" catalog which simplifies the selection of electrical equipment for motor, lighting or feeder circuit.
Order by number from Department 7-N-20.

General Electric Company, Nela Park, Cleveland, Ohio. 24-page profusely illustrated booklet on rectified fluorescent lamps and luminaires.

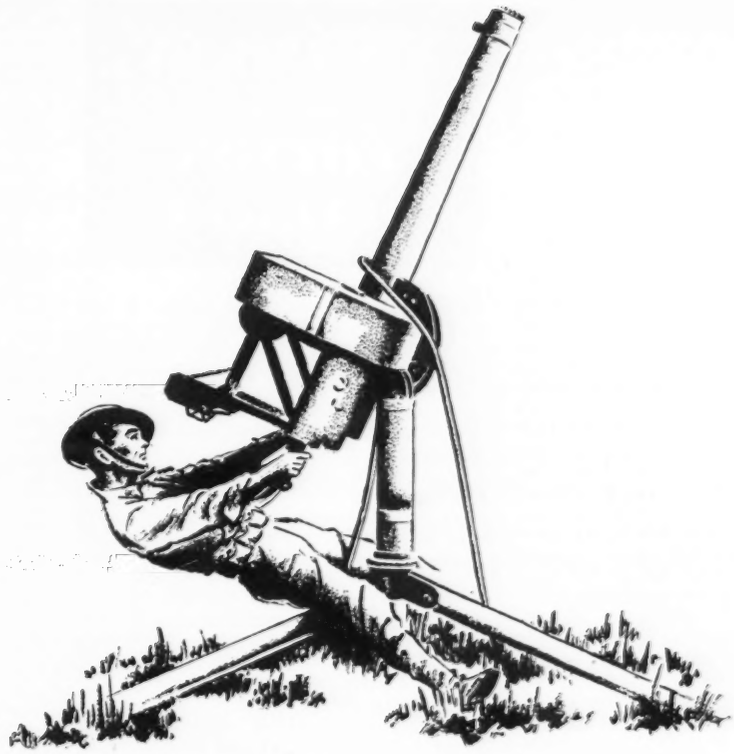
Johnson Bronze Company, New Castle, Pa. Catalog L-3 on Ledaloyl self lubricating bronze bushings and bearings.

U. S. Department of Commerce, Bureau of Foreign and Domestic Commerce, Washington, D. C. "Industrial Reference Service", Part 12, on textiles and related products, giving facts and figures on the United States silk and rayon industry.

S. Blickman, Inc., Weehawken, N. J. "What to Look for When You Specify Stainless Steel Processing Equipment", a brochure prepared as a guide to engineering planning the purchase of stainless steel processing equipment.

Protective Coatings, Inc., 10391 Northlawn, Detroit, Mich. "The Tocol Line", a booklet giving detailed and essential information about the Tocol line of protective coatings.

Mechanical Handling Systems, Inc., Detroit, Mich. 8-page illustrated catalog giving complete details of the Quik-Set safety steel scaffolding for above floor painting, wiring, etc.



"Let's get this one over in a hurry . . ."

122 years ago our Republic was forty-four years old in its independence—big and raw and just beginning to feel its strength.

122 years ago, H. W. Butterworth established this business to pioneer, develop and supply machinery for the Wet End of the Textile Industry.

For several years the business prospered, serving the needs of mills which in turn supplied the textile requirements of a nation at peace. Then came war. Heavy demands were made on the mills for fabrics and we strove to provide the equipment necessary for a bigger output.

Again peace—again war . . . Again peace—again war . . . Four times in 122 years. Each war has brought heavier demands from Textile Mills—and in war as in peace we have stood by to supply equipment as quickly as possible.

Again it is war—again it is Textiles for Victory! The manufacture of gun mounts has first call on our facilities, but we are still here to help you improve, repair and replace obsolete equipment to the utmost of our ability.

And again we say, "Let us all exert ourselves as we never did before—let's get this one over in a hurry!"

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of equipment now in use in the wet end of textile finishing cannot operate at a profit in competition with modern machines.

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Butterworth

PRODUCING GUN MOUNTS FOR THE UNITED STATES ARMY

COMMENT on the COTTON MARKET

New Orleans, December 17, 1941

DURING the past month the cotton market was dominated by war news, or rumors of wars, and developments at Washington regarding Price Control Legislation. The market was irregular most of the time with comparatively wide swings in prices. The Japanese attack on Pearl Harbor and declaration of war caused a severe break, while the declaration of war by Germany and Italy was followed by a good upturn. Adoption of a Price Control Bill by the House with a high ceiling for agricultural products stimulated demand for contracts and caused a good upturn. Raise in the parity price of cotton in the latter part of November to 17.73 for Middling ⅞-inch on the farm, vote of the cotton farmers for continuation of Government control over the planting and marketing of their crop in 1942 and gradual drying up of hedges, due to small spot sales, were other helpful factors. On the other hand, the sudden placing of ceilings on cottonseed oil and other fats well below the market, closing of the cotton seed oil futures markets and offerings of large amounts of Government wheat by the Commodity Credit Corporation tended to unsettle trading sentiment but did not affect values much. It was stated in Washington that the Commodity Credit Corporation does not contemplate offering any of its cotton stocks for sale. Prices as this is written are around recent highs and are about $3.50 a bale above those of a month ago, while spot quotations are near the highest of the season.

The Price Control Bill, as passed by the House, provides that no ceiling on agricultural products can be fixed under the average price of 1919-29. The average farm price for cotton during these years was 21.49 cents a pound for Middling ⅞-inch. The bill is now being considered by a Committee of the Senate which apparently intends to make some changes in its provisions. The change most favored at the moment by the Committee is a board of five men with Leon Henderson as its Chairman endowed with power to fix ceilings temporarily for 60 days, pending investigation and a final decision. The Administration is also pressing for the power to license dealers in commodities and for authority to buy and sell. The House rejected both of these provisions.

The first notices on December amounted to 51,800 bales and caused heavy liquidation and a price recession due to the fact that a considerable portion of the long holdings in that position were owned by foreigners who were prohibited from transferring to later months by orders of the Treasury Department. After the first day the liquidation in December was orderly and additional notices failed to disturb the market.

The Department of Agriculture reports 93.9 per cent of the cotton farmers participating in the referendum on the 13th voted for continuation of Government control over their plantings and marketing of the crop. The vote given out was 743,844 for continuation and 48,613 against. About 2,500,000 farmers were eligible to vote. The marketing quota for cotton in 1942 is expected to be fixed between 11,000,000 and 12,000,000 bales.

Congress has voted to extend for five years the soil conservation and marketing program, under which payments are made for acreage reduction, and the marketing quotas fixed loans of 85 per cent of parity have also been extended for five years. Efforts of Senator Bankhead to have the loans made on a sliding scale based on a changeable parity have been abandoned.

The movement into the loan is increasing. The latest figures available show that 1,494,878 bales went into the loan up to December 13. The New York Cotton Exchange Service says it is now believed that between 2,000,000 and 2,500,000 bales will go into the loan leaving only 8,325,000 to 8,825,000 bales of this crop for domestic consumption.

The Crop Reporting Bureau, in its final estimate of the crop, reduced its prediction 44,000 bales from the November 1 figure to 10,976,000 bales of 500 pounds. This estimate is equivalent to 10,727,000 running bales based on the official report of an average weight for the crop of 511.8 pounds. The Census Bureau reports 9,595,704 running bales ginned to December 1, leaving about 1,131,000 bales to be ginned to make good the official estimate.

The Department of Agriculture announces that the subsidy on exports of manufactured cotton products will cease at midnight December 19. This move was due to the outbreak of the war with Japan. The export office of the Department reports sales and deliveries under the export program between July 1 and December 1, 1941, amounted to the equivalent of 250,763 bales of which, however, only a small portion has actually been exported. Exporters have until October 31, 1942, to make shipments.

The acreage allotment for 1942 is 26,598,000. This compares with the 1941 allotment of 26,699,917 when 23,250,000 acres were planted. These figures do not include about 800,000 acres reserved for adjustments among farmers who plant minimum amounts and for new farmers.

Unfixed spot "call" sales as of December 5 amounted to 941,100 bales compared with 954,000 a year ago. Unfixed spot call purchases total 292,300 bales compared with 144,700 a year ago.

CENSUS REPORT OF COTTON CONSUMED AND STOCKS

Consumption of Lint —Bales—	This Season	Last Season
In United States, November	849,773	741,170
In United States, October	953,600	770,832
In United States, 4 months	3,553,128	2,801,125
In Cotton Growing States, November	726,584	635,934
In Cotton Growing States, 4 months	3,017,522	2,398,790
In New England States, November	99,122	83,005
In New England States, 4 months	420,076	326,368
In All Other States, November	24,027	22,231
In All Other States, 4 months	115,530	75,967
Mill Stocks		
In United States, November	2,249,638	1,684,018
In United States, October	1,993,293	1,355,460
In Cotton Growing States, November	1,868,931	1,453,157
In New England States, November	320,974	191,621
In All Other States, November	59,733	39,240
Warehouse Stocks		
In United States, November	13,964,018	14,726,496
In United States, October	13,342,123	13,836,566
In Cotton Growing States, November	13,595,328	14,561,536
In New England States, November	350,696	154,847
In All Other States, November	17,994	10,113
Active Cotton Spindles		
In United States, November	23,069,146	22,685,622
In United States, October	23,043,310	22,470,784
In Cotton Growing States, November	17,413,090	17,170,154
In New England States, November	5,011,340	4,891,702
In All Other States, November	644,716	623,760

CONSOLIDATED MOVEMENT TO DECEMBER 15, COMPILED BY NEW ORLEANS COTTON EXCHANGE

	This Year	Last Year
Received at Ports	1,719,010	2,167,685
Stocks at New Orleans	510,631	528,547
Stocks All Ports	3,410,737	3,359,540

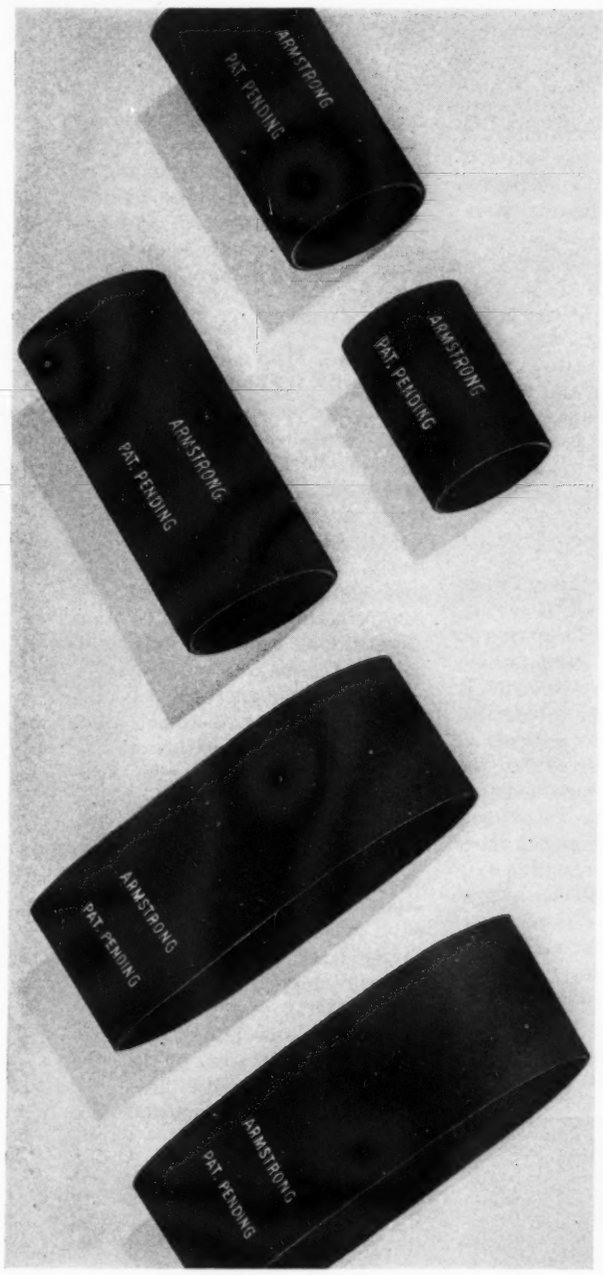
Exports have been discontinued.

"Cotton Manufacturing"

Dominion Textile Company, Ltd., 710 Victoria Square, Montreal, Canada, has published an excellent book entitled "Cotton Manufacturing", prepared and edited by H. F. Mills, general superintendent of the company's plants, and W. King, managing editor of the Canadian Textile Journal. The book is prepared as a standard reference work for the use of students from mills of the company and its subsidiaries. Material in the volume has been written by staff members of the company, with contributions from a representative of a textile engineering firm in Canada. The book serves as a standard textbook for the 4-year course sponsored by the company for its employees and contains essential data on basic principles in opening and picking, carding, combing, drawing, fly frames, spinning, winding, spooling and warping, slashing, weaving, cloth room machinery, analysis of fabrics, designing, and economics of the cotton industry in Canada. It is well illustrated. Price $4.50.

6 WAYS BETTER!

Test after test and actual use prove Armstrong's Accotex Aprons are superior to ordinary aprons



HERE ARE SIX BIG REASONS why you'll save time, trouble, and money when you switch to Armstrong's Accotex Aprons . . . and why 325,000 spinning and roving frames are now equipped with these efficient aprons:

1 SEAMLESS: Accotex Aprons have no troublesome seams to break open and shorten life.

2 NONSTRETCHING: Accotex Aprons are reinforced with a sturdy interliner . . . assuring no loss of efficiency due to stretching during operation.

3 UNIFORM: All Accotex Aprons have the identical composition, and the dimensions of every size are absolutely accurate. Thus, barring unusual mill accidents, each apron will give consistently good service for the same length of time.

4 CLEAN RUNNING: Accotex Aprons give you cleaner running work, reduce waste to a minimum . . . because they don't crack or scuff during operation.

5 REDUCED LAPPING: Accotex Aprons are not affected by changing temperatures or humidities. Hence they perform with a minimum of lapping.

6 GOOD FRICTION: The good friction surface of Accotex Aprons keeps slippage at a minimum. Thus you'll get maximum production of a high quality yarn.

Armstrong's Accotex Aprons were perfected after years of specialized research, laboratory testing, and constant field checking. They're made of a special compound which is both nonoxidizing and highly oil-resistant, and reinforced with a sturdy interliner. Many of the Accotex Aprons now in use have given from 18 months' to two years' service and show very little evidence of wear. There's every indication that they will continue to give satisfactory service for a substantially longer period.

See your Armstrong representative for the complete story on Accotex Aprons. Or write Armstrong Cork Company, Industrial Division, Textile Products Section, 923 Arch St., Lancaster, Pennsylvania.

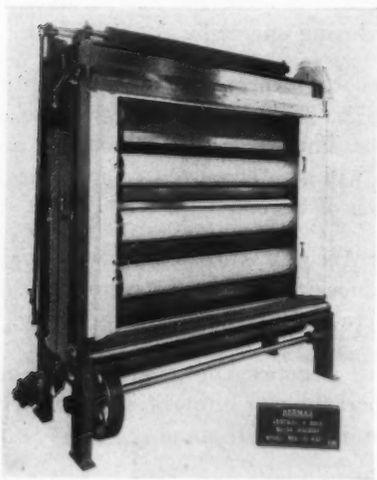
ARMSTRONG'S ACCOTEX APRONS

CORK COTS **ACCOTEX COTS**

NEW EQUIPMENT and MATERIALS

New Brushing Machine

Hermas Machine Company, Hawthorne, N. J., has placed on the market a brushing machine with new features that are said to add greatly to efficiency and long machine life. The sand rolls are turned and balanced and covered with fine or coarse garnet cloth. All rolls and brush bodies are made from hollow steel, eliminating warping. Redesign of the machine places all drives inside the machine, thus saving floor space and protecting the operator. Other features are Veelos belting and roller chain transmission, individual suction hoods for each brush and



roll, and redesigned bearings and shafting to permit safe speeds up to 1,000 r.p.m. on the rolls. Controls make it possible to give the cloth a light brushing or a very drastic cleaning, by a graduated pressure on the rolls and brushes. Pressure is always uniform over the entire width of the cloth. Individual suction hoods are fitted along the rolls, connected with a vertical exhaust stack that carries away brushings completely and efficiently. All parts of the new brushing machine are accessible for cleaning and threading as front and back are protected by shutters of galvanized steel that open like double doors the full width of the machine.

◆

Nylon Darning Thread

Nylon darning thread has been developed and is obtainable on 40-yard spools in ten hosiery colors. The yarn is produced by spinning short nylon fibers together into one continuous strand of thread, giving a soft woollike finish that is desirable for darning men's and women's hosiery. It is said to have great strength and abrasion resistance.

◆

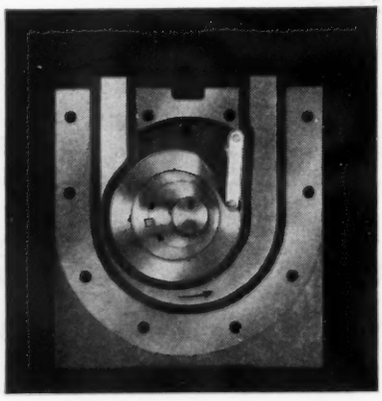
Product Repels Water and Fluid Stains

Stainpruf Process Company, Los Angeles, Calif., has developed a product for the textile field which is said to cause fabrics to become repellent to water and most fluid stains when it is applied. When applied to the fabric it surrounds each fiber with a protective coating, thereby keeping liquids, moisture and foreign substances out and off the fibers. It can be applied without the use of starch and there is no decrease in the flexibility of the fabric inasmuch as the voids are not filled. When used in combination with starch, finished goods are said not to lose their appearance through moisture absorption. It is distributed by Tesco Chemical Company, Huff Road, N.W., Atlanta, Ga.

◆

Squeegee Type Pump

Downingtown Manufacturing Company, Huber Pump Division, Downingtown, Pa., has published information on an entirely new type of pump, which operates on the squeegee principle. It consists of a flexible rubber tube which is alternately squeezed and released in a rocking, squeegee manner so that the liquid or gas is actually breathed into and out of the tube. The tube itself can be made from pure gum rubber and various acid and oil resisting synthetic materials, or lined with synthetic materials for corrosion resistance or to prevent contamination. Solutions containing solids, whether abrasive or otherwise, cause practically no wear. No churning or agitation is caused by the pumping action, and hot or cold liquids or gases do not affect the operation of the pump or the life of the tube. It is noiseless in operation. Available in single or double stage to meet requirements.



◆

Cleaning the Air Cleaner

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., has announced a new semi-automatic device that cleans the Precipitron with a brief service interruption to only a small section at a time. The Precipitron is an electrostatic precipitator that is used in air-cleaning problems in buildings and factories. The cleaner has a motor-driven carriage that sweeps slowly up and down in front of the dirty precipitator plates; the carriage has three horizontal rows of nozzles from which water, air and oil are sprayed in turn over the plates. The operation then stops, having lasted but 30 minutes. All the operator needs to do is to start it and half hour later return and move it to the next section.

◆

Electron Microscope May Study Textile Problems

Information has been received from Interchemical Corporation, 75 Varick St., New York City, that this company is now using in its laboratory the electron microscope, manufactured by RCA, which is said to open up a new world of study by making it possible to examine with much greater clarity the structure of pigments, thus the character of industrial finishes, textile colors, etc., may be observed.

The electron microscope is based on a principle which does not depend on visible light, but rather on a new branch of physics commonly called "electron optics", founded on the knowledge that light and electron beams behave similarly under certain conditions. It utilizes a beam of electrons instead of light rays, which are said to search out objects which the larger light rays would obscure. The electron microscope permits 50 times the resolving power of the very best light microscope, and magnification one billion times the area of the object are now being made with the new instrument used by Interchemical. It requires 60,000 volts.

◆

"Industrial Reference Service"

U. S. Department of Commerce, Bureau of Foreign and Domestic Service, Washington, D. C., has published "Industrial Reference Service", Business Series No. 22, which carries the heading "What Can Be Substituted for Materials Needed for Defense". The 28-page publication lists the various types of materials, metals, etc., that can be substituted for those that are being employed in defense work.

ARKANSAS PRODUCTS

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KIER BOILING	*SOAKING*	*SOFTENING*	*DELUSTERING*
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DEGUMMING	*FINISHING*	*LUBRICATING*	*THROWING*

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ALERT to the difficulties that the textile industry faces in the year ahead, we are ready to help you to master them through experience gained in over thirty-five years of continuous and satisfactory service. This organization possesses the ability to cope with the present emergency.

Our research technicians will blend their skill, experience and equipment in a common effort toward solving those problems created by unusual conditions.

The entire Arkansas organization - in field, plant and laboratory - will be devoted to maintaining the high standard of Arkansas products.

NOW MORE THAN EVER WE ARE DETERMINED TO OFFER YOU ONLY THE VERY BEST THAT INDUSTRY, RESOURCEFULNESS AND RESEARCH CAN PRODUCE.

ARKANSAS CO·INC·

NEWARK ESTABLISHED 1903 NEW JERSEY

AC INC

Lighting in Reverse for Sabotage Protection

Lighting engineers of Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., are planning to use glare, the anathema of lighting engineers, as an ally in the present defense against the saboteur—to blind the would-be intruder to a plant while the guards remain inconspicuous in the shadows, just as one can at night see clearly into a lighted room but cannot been seen readily by those inside.

The luminaire design is a Fresnel lens, in reality a miniature lighthouse beacon, which throws a flat, fan-shaped beam of light with great efficiency. A row of these luminaires is set on posts several feet away from the buildings to be protected, aimed so their light is projected slightly downward away from the buildings. The space between the luminaire and the buildings is virtually in darkness. A would-be intruder approaching the plant sees only these blinding spots of light; guards behind the lights see him clearly.

◆

Lincoln Arc Welder Control Eliminates Need for Meter

Lincoln Electric Company, Cleveland, Ohio, has made available an improved and simplified design of its exclusive system of dual continuous control for arc welding machines which eliminates the need for meters showing volts and amperes. The welders have both job selector and current control calibrated and equipped with dials which indicate the type of work and the number of amperes for each and every setting. The welding operator can get quality welds and high speeds by varying both the slope of the volt-ampere curve and the amount of welding current independently and positively to suit every job encountered. Another feature of the welder control is that both voltage control (job selector) and current control are continuous in operation. Being continuous, the control can be advanced or retarded in increments as fine as desired. It has the ability to positively reverse polarity.

◆

Self-Timestudy

One supervisor who just couldn't understand where the time went in the average day decided he would find out. So, every day for a week he kept a very brief diary of just what he did each hour.

He set aside a page for each half day and divided each page into sections for each hour. At the end of each hour he wrote what he had been doing.

Over the week end he studied and analyzed these "self-timestudies" and totaled up the time spent on various phases of his job. He separated all the entries which might have been considered not very productive of real results. He was amazed to find out how much of his time was spent on things of little importance, and also how many hours he had absolutely wasted.—*"Management Information", Elliott Service Co., Inc.*

◆

How Do You Reprimand?

When you reprimand a man, does he sulk or talk back? Does he appear to feel that you have no right to reprimand him?

If your reprimands are met by such reactions, consider the following suggestions:

The next time you have occasion to reprimand a man, take him to a place where the two of you can talk *in private.*

Then proceed to explain to him, calmly, but clearly, the seriousness of his mistake. Show him its effect on the work, on the morale, and the reputation of the department, or on his own personal success.

After he has admitted his error, show him that you are ready to forget the incident. You have accomplished your purpose and, if you continue to refer to it later, it will merely stir feelings of bitterness and resentment.—*"Management Information", Elliott Service Co., Inc.*

TRADE AUTOMATIC MARK

Manufacturers for Over Thirty Years

MODERN *Electric Propelled* INDUSTRIAL TRUCKS

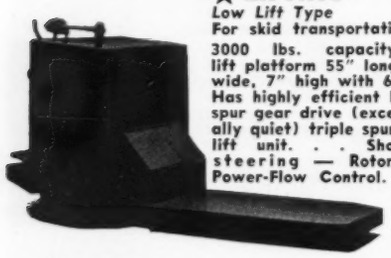
FOR ECONOMICAL MATERIALS HANDLING IN THE TEXTILE INDUSTRY

★ LIFTING

Low Lift Type

For skid transportation

3000 lbs. capacity—has lift platform 55" long, 27" wide, 7" high with 6" lift. Has highly efficient helical spur gear drive (exceptionally quiet) triple spur gear lift unit. . . Shockless steering — Rotor-Brush Power-Flow Control.

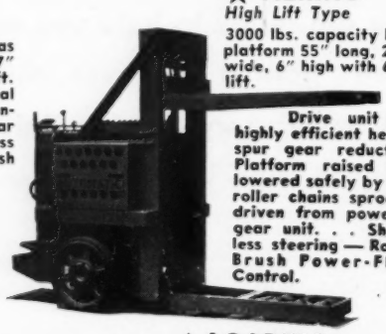


★ TIERING

High Lift Type

3000 lbs. capacity has platform 55" long, 26" wide, 6" high with 60" lift.

Drive unit has highly efficient helical spur gear reduction. Platform raised and lowered safely by two roller chains sprocket driven from powerful gear unit. . . Shockless steering — Rotor-Brush Power-Flow Control.



★ STACKING

Use your *full* vertical storage space—stack unit loads on pallets—eliminate re-handling—simplify inventory—speed up production—use the "AUTOMATIC" Fork Truck System.

Capacities 1000 and 2000 lbs.

Telescopic Lift 120" Uprights collapse to 83"

Truck is exceptionally compact, will maneuver easily in congested areas also lightweight for min. capacity elevators.

Get Full Details

★ LOADING

Platform Type

4000 lb. capacity.

Equipped with pneumatic tires. Exceptionally speedy and efficient. For outdoor and ramp operation.

Platform deck 100" long, 51" wide, 29" high.

Has heavy duty spur gear drive—hand wheel steer—Rotor-Brush Power-Flow speed control.

★ HAULING

For every hauling purpose. Tractor is exceptionally compact and powerful. Has 1000 lbs. Max. hauling D. B. P. Two wheel steer. Quiet drive. Rotor-Brush Power-Flow control.

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Clean Goods From Looms

To get high output of perfect goods you must prevent damage caused by dripping, leaking oil.

Change from oils that won't stay where applied—to drip-less waste-less NON-FLUID OIL. You'll prevent oil spots also save trouble and money. By remaining in bearings NON-FLUID OIL outlasts oil many times over—keeping down oil and application cost.

7 out of 10 mills are regular users. They know NON-FLUID OIL saves them money.

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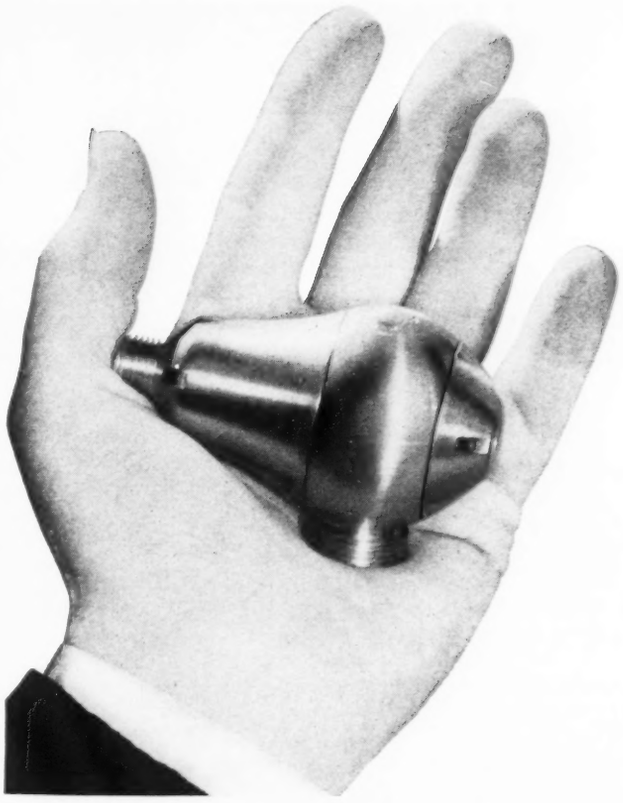
MODERN TEXTILE LUBRICANT

Better Lubrication at Less Cost per Month



The Reliable Atomizer

Looks like a sweet potato partly for streamlining, so as not to catch lint; partly to make it *diaphragmatic.*

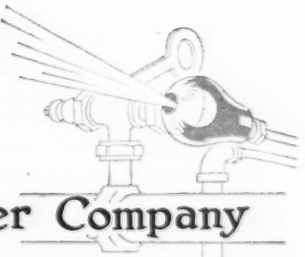
After hard and continuous mill service, orifices in the self cleaning

Parks Turbomatic Humidifier

still remain normal in size, shape, and alignment—also in action.

Rated conservatively. No double standards; one for our laboratory—one for your mill.

Interchangeable with earlier Turbo models.



Parks-Cramer Company

Fitchburg, Mass. Boston, Mass. Charlotte, N. C.

PERSONAL NOTES
About Men You Know

J. L. RIEGEL has been named president of The Trion Company, Trion, Ga., and of the Ware Shoals Mfg. Company, Ware Shoals, S. C., succeeding the late BENJAMIN RIEGEL. At Trion, N. BARNARD MURPHY, who has been vice-president and general manager for a number of years, has been made executive vice-president, and at Ware Shoals, W. A. L. SIBLEY, who has been vice-president and general manager there for several years, is now executive vice-president.

W. E. REID, who for several years has been manager of the finishing department at The Trion Company, Trion, Ga., has been made assistant general manager of all of the company's properties.

A. A. BRAME has become sales representative for Greensboro (N. C.) Loom Reed Company, succeeding C. F. WALLACE, who is now in the U. S. Army.

PAUL ELKINS has been promoted to overseer of carding at Newnan (Ga.) Cotton Mills.

W. W. WAITS, formerly with the Calhoun Mills, Calhoun Falls, S. C., is now overseer of spinning at the Chadwick-Hoskins Mill No. 5, Pineville, N. C.; and A. B. FLETCHER, formerly with Industrial Cotton Mills, Rock Hill, S. C., is overseer of weaving at Pineville.

BURNET VALENTINE, with Pepperell Manufacturing Company for the last 13 years, has become merchandiser of the cotton goods division of A. D. Julliard & Company, New York; and FRANCIS J. MCKENNA, associated with the Chemical Bank & Trust Company since 1936, has become assistant treasurer of Julliard.

I. B. COVINGTON, JR., Wadesboro, N. C., has been made assistant cost accountant with Kendall Mills, Paw Creek, N. C. He is a graduate of the textile school of N. C. State College.

HUGH MORETZ has accepted the position of secretary-treasurer of the New City Mills, formerly known as the City Cotton Mills, Newton, N. C.

W. M. RATCLIFFE, JR., president of the Guadalupe Valley Cotton Mills, Cuero, Tex., has taken over active management of the plant, following the recent death of R. B. MCMAHON, manager for many years.

W. B. Strickland, left, has resigned his position with Stein, Hall & Co., as sales representative, to become connected with the Southern Regional Research Laboratory, at New Orleans, as technologist, effective on January 1. He is shown here at the meeting at Auburn, reported on page 65 of this issue, with **T. H. Floyd,** superintendent of the Tallassee Mills, Tallassee, Ala.

JOHN S. FURTARDO, for many years overseer of spinning at Richard Borden Mill, Fall River, Mass., now holds the same position with the York Manufacturing Company, Saco, Maine.

ALFRED PATE is now general superintendent of Stonewall (Miss.) Cotton Mills.

W. E. GANTT, who has been overseer of the cloth room at Dover Mill Company, Shelby, N. C., has accepted the same position with Springs Cotton Mills, Lancaster, S. C.

G. L. GAULDEN, formerly associated with Edna Mills Corporation, Reidsville, N. C., has accepted a position with Riverside & Dan River Cotton Mills, Danville, Va.

Nicholas J. Phelan, 60, for the past 20 years subscription representative of "Cotton" in the Carolinas, passed away at Mercy Hospital, Charlotte, N. C., on December 27. His death followed an illness of several weeks that resulted from an attack of influenza.

Funeral services were held in Charlotte, at St. Peter's Catholic Church, of which he was a member, with interment in Cohoes, N. Y. He is survived by Mrs. Phelan, and a brother, Thomas S. Phelan, of Newport, R. I.

"Nick" Phelan, as he was intimately known by hundreds of textile men throughout the South, was a thorough gentleman, a loyal and conscientious workman. No one on the staff of this magazine maintained more enthusiasm and interest in his profession than did this lovable Irishman who found in his work with us the thrill and satisfaction that comes from effective, loyal effort. His associates, with profound grief in his passing, salute his years of splendid service to the magazine and the industry he loved. Throughout his territory, many a heart is saddened, and many a throat constricted by the realization that his cheerful smile and sparkling personality have gone from the scene.—R. W. P.

Obituary

FREDERICK HAMBLETON, owner of the H & P Spool & Bobbin Company, Lawrence, Mass., passed away November 19 at his home in Methuen, Mass., after a brief illness. He was 66 years of age and had been prominent in the textile spool and bobbin business for the past 45 years.

MISS BERTHA G. DARY, treasurer of the Dary Ring Traveler Company, Taunton, Mass., passed away recently. Miss Dary's will bequeaths the income from her business to her 13 employees for the next five years.

JOSEPH J. NORTON, retired southern agent for Robert Moore & Company, New York cotton merchants, passed away suddenly November 28 at his home in Seneca, S. C.

BENJ. RUSSELL, Russell Manufacturing Company, Alexander City, Ala., passed away December 16 at the age of 65.

HENRY L. DOHERTY, JR., one of the founders of the Henry Doherty Silk Company, Passaic, N. J., passed away November 26 at the age of 62.

WILLIAM B. GARDNER, president and treasurer of Nashawena Mills, New Bedford, Mass., passed away after a heart attack at the age of 69.

FREDERIC BEGGS, president of the Empire Piece Dyeing and Finishing Company, Paterson, N. J., passed away early in December.

BENJAMIN W. CUTLER, 57, an executive of the Pepperell Manufacturing Company, passed away at Upper Montclair December 12.

M. W. GILMER, 58, for 24 years master mechanic at Anniston (Ala.) Manufacturing Company, passed away suddenly of a heart attack September 27.

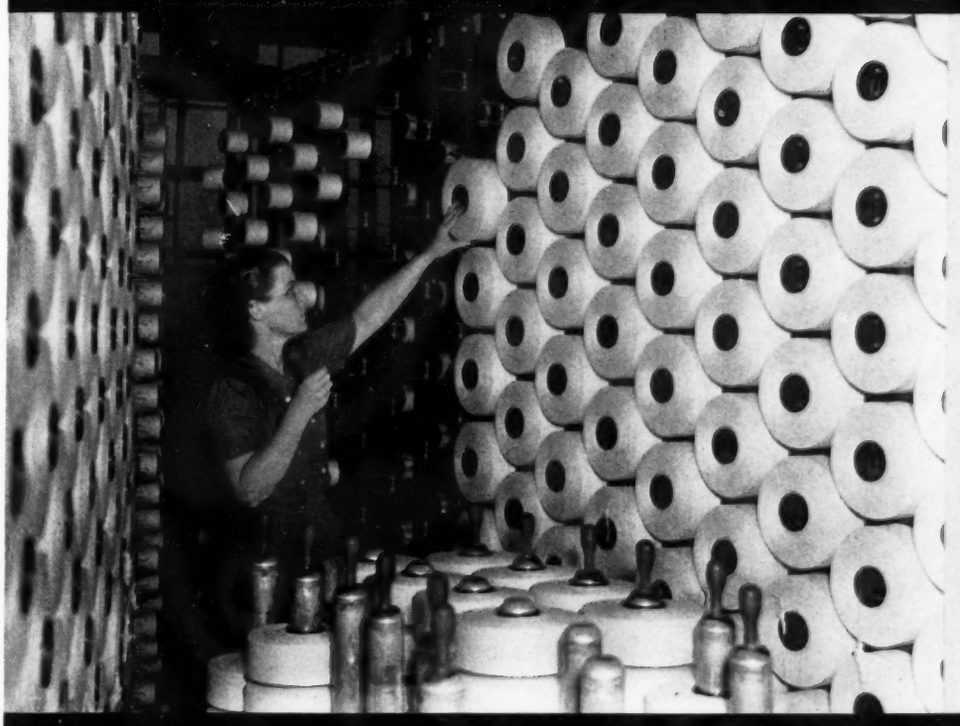
ROBERT F. CLAUSSNER, 69, of Claussner Hosiery Mills, passed away recently in Hollywood, Calif.

ROBERT R. RAY, 89, prominent Gaston County (N. C.) textile executive, passed away on December 10. He had been with the McAden Mills for more than 53 years, most recently as treasurer and general manager.

BARBER-COLMAN SYSTEM OF SPOOLING AND WARPING

TIME and EFFORT SAVED in CREELING

No Lifting Required in Handling Cheeses on Tridents
Creel Loaded on Inside While Running from Outside



Cheeses come to the transfer table on tridents holding 15 cheeses each. These tridents are simply slid onto the truck--no lifting is necessary. This truck is rolled to the inside of the creel, where loading, for either plain or striped beams, is quickly and easily accomplished at the same time that a beam is being run from the outside of the creel. The Barber-Colman system assures greater production with less effort.

BARBER-COLMAN COMPANY

ROCKFORD, ILLINOIS, U. S. A.

FRAMINGHAM, MASS., U. S. A. • GREENVILLE, S. C., U. S. A. • MANCHESTER, ENGLAND • MUNICH, GERMANY

CHECK pH WITH THIS HANDY CALCO INDICATOR!

The amount of fluctuation in the pH measure of alkalinity or acidity is a matter of increasing importance in dyeing many different fibres. These fluctuations have explained many variable results that were not accounted for in the past.

This handy Calco pH indicator will assist in determining quickly the relative pH in your operations from day to day. It fits the pocket, yet the transparent plastic case effectively protects its contents against the action of fumes and moisture. Refills of indicator paper are easily inserted.

We are glad to make this indicator available to our friends throughout the Textile Industry. It is but one of the many practical ways in which we are trying to assist Calco customers to make the most of available materials and their own time.

You can obtain one of these indicators without charge simply by asking your regular Calco representative on his next call. Please do *not* request one by mail or phone.

CALCO CHEMICAL DIVISION
AMERICAN CYANAMID COMPANY
Bound Brook, New Jersey

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Calco Dyes are Better Buys

Calco

SLASHER PRODUCTION INCREASED

With Our EXTRA CYLINDER Equipment

EXTRA 7 FT. DIA. CYLINDER

These slashers are equipped with our extra 7-ft. diameter cylinder equipment. Production has been increased over 50%.

Why be satisfied with your present slasher production when it can be greatly increased with our modern slasher equipment without extra labor expense. The number of slashers can be reduced.

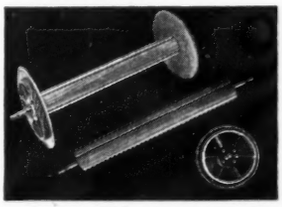
Contact rolls and positive self-releasing gear drive provides efficient use of drying surface without excessive strain on the yarn. Elasticity of the yarn is retained, helping to improve weaving efficiency.

Ball bearing equipment can be installed throughout your slasher to provide smooth operation at the increased speeds.

Present equipment is utilized as far as possible, thereby keeping the cost at a minimum. We can give you increased production at nominal cost.

Let our representative help you with your slasher problems—without obligation.

Other QUALITY Products



LOOM BEAMS . . . West Point loom beams and beam heads are superior in their operation and economy.

GEARS . . . Gears of all types — noted for their efficiency and durability.

WEST POINT FOUNDRY & MACHINE CO.

(Batson-Cook Company, Owners)

WEST POINT, GEORGIA

ANOTHER DAY IS COMING

Perhaps it is already here—one thing that is certain about the future—The "good old days" are gone forever.

Business of the future will be done the hard way. Success will come to those who know how and do an even better job under more difficult conditions.

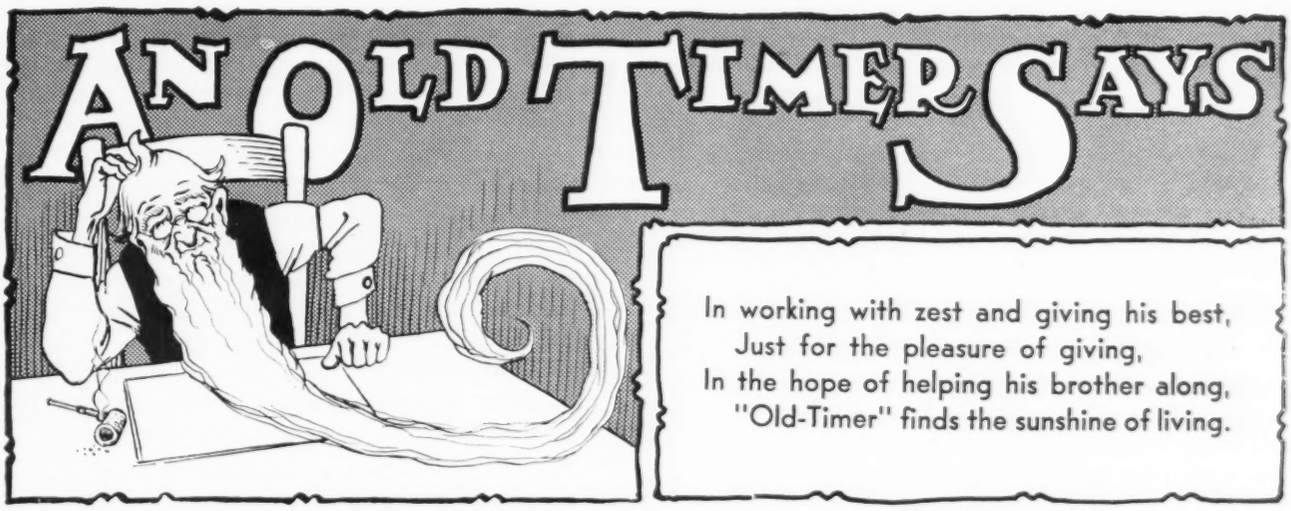
At SONOCO we view this situation with confidence. A hardening process will do us all good, and we accept this challenge of the future. We guarantee that SONOCO products and service will continue to *improve*.

SONOCO MAKES *EVERYTHING* IN *PAPER CARRIERS*

SONOCO PRODUCTS COMPANY

BRANTFORD ONT. HARTSVILLE S. C. MYSTIC CONN.

DEPENDABLE SOURCE OF SUPPLY


AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

Some Random Thoughts

TO THE BEST of my knowledge, no practical mill men, no starch manufacturer, no size manufacturer, nor any chemist has ever been able to get a perfectly even distribution of starch and sizing ingredients on a cotton warp.

Numerous customers complain that jeans, khaki and some broadcloths have open and close places in the goods which many people claim are caused by reeds and poor weaving, while a simple test will show uneven distribution of starch on the warp threads is the cause of the trouble.

Do not understand us to say that starch manufacturers or sizing manufacturers are in any way at fault in this problem of uneven distribution of starch and sizing on the yarn. Heck no! In fact, they have probably contributed more to our sizing methods than we practical mill men ourselves have, but the fact remains that there is still a wonderful opportunity for some one to do big things along this line.

We all know that much depends upon the mechanical action of the wool blankets and other mechanical forces too numerous to mention, and far be it from OLD-TIMER even to intimate that this unevenness is caused in any part by the difference in the properties of starches, gums, sizings or any other materials used for dressing warps.

THE MAJORITY of overseers of weaving and superintendents and starch manufacturers and sizing manufacturers seem to use every means possible to obtain penetration of the starch in sizing cotton warps. How about cut rayon and filament rayon warps? Do you want penetration or a flexible coating on the outside of the yarn? Some of you experts give us an article for COTTON explaining your version and experiences on this problem.

RAISE THE steam pressure on your slasher cylinders and then notice how much more fly or chafing you have in your weave room.

Moral: Do you know, actually *know*, what the moisture content of your warps is as they come from the slashers? Have you tested yarn from all your slashers or from just one of them?

Of course you know that the same steam pressure on all slashers will not always leave the same amount of moisture in the warp?

IN CONVERSATION with one of the large manufacturers of sizing materials, we asked if the spraying of the cotton warp just before it enters the size box would cause the yarn to take up more size and would the sizing penetrate the yarn better?

He said some of his customers had experimented with using a penetrating or wetting-out agent directly to the size mix for the purpose of giving a better penetration of the size, but he had never seen anyone try spraying the yarn with a penetrant before sizing.

Why doesn't some one try it? It would seem a simple matter to install a system of spray nozzles to play on the sheet of yarn just before it enters the size box. Something like the arrangement for spraying oil on cotton in the picker room.

THE CHEMISTS tell us there is quite a difference in the size of the molecules of cellulose in rayons made from different sources. For example, rayon made from cotton linters and rayons made from spruce wood. This brings up the juestion: is there any difference in the absorbent qualities of rayons made from different materials? If so, which will take up more size, which will dye penetrate best?

THIS QUESTION may sound amateurish to people who have speeded up slashers to where they are running 100 per cent faster than the old slashing ideas of about 30 yards per minute, and they may know the answer. But those of us who have not speeded up our slashers don't know. So here is the question: Does your sized yarn show more or less elasticity since you are running the yarn over the cylinders so much faster?

This question is based on the supposition that you

have more steam on your cylinders at the high speed than you did at the low speed and that most men claim the elasticity of yarn, sized with the same size mix, can be varied greatly by the process of drying, although retaining the same moisture content. That is, yarns dried quickly will have much less elasticity than yarns dried slowly. This reasoning is especially applicable to the size film on the yarn. What's your answer?

A QUOTATION from Harold Bigbie's book titled "More Twice Born Men" says: "There are two seas in Palestine, one in the North teeming with life, fish, fruits, crops, birds, flowers etc., life of all kinds. In the South is the Dead Sea with no fish, no fruits, no crops, no birds, no flowers, no life of any kind. What is the reason for this difference?

"The sea of Gallilee (in the North) has a river flowing into it and a river flowing out of it. The Dead Sea has the same river flowing into it, but none flowing out.

"A mind which receives and gives is a sea of Gallilee, a mind which receives and gives nothing out is a Dead Sea."

This brings out the idea, very clearly, which we tried and partly succeeded to impress on members of the Southern Textile Association. We said it in a little different way, something like this: If you will bring one manufacturing idea to our meetings, we will give you ten ideas to take back home with you.

Now, since human relations is getting to be such an important factor in the efficiency of overseers and superintendents, the corresponding important qualification of an executive is that rare gift called personality. We say "gift" because we believe it is a confirmed fact that some human beings are more naturally gifted in personality than others, and we also believe, in fact I believe I am safe in saying that we *know* that a man can *acquire* personality—he can improve his personality by concentrated effort and study.

Of course you do not doubt the statement that a man can improve his manners and the courtesy he should show to other people. Sure, you say, anyone knows that. Well, courtesy and good manners are analogous to personality—in fact they are a part of personality. How could you say a person has a good personality if that person did not also have good manners?

Now to get back to the thought we started to emphasize: *You must give if you expect to receive.* That is a cardinal principle of personality and that quality can certainly be acquired by any person. First, that person must dispel as much of his selfishness as he possibly can, and we do not believe that there is any one trait that will give a human being as much pleasure as realizing he has been able to dispel from his personality that one big fault most all of us have to fight and that is selfishness.

It is selfishness which keeps the overseer of spinning from doing something which he knows would help the overseer of weaving unless the superintendent tells him to do it. We are referring to some of the many minor items which the overseer of spinning knows about that neither the superintendent nor the overseer of weaving has any way of knowing. This also applies to overseers of carding and all other foremen and all other people in all walks of life. Just remember, fellows, a man who is endowed with too much selfishness can never have a good personality, a personality such as we started out to talk about. You must *give* if you expect to receive. The Sea of Gallilee gives and look what it receives. The Dead Sea only receives. A very appropriate comparison of the man with personality and the man who has none.

Thirty years ago many overseers were selected because of their efficiency and ability as mechanics. They knew looms, they knew cards or spinning frames. Not so today, as you all know. As said before, all this "human relations" problem is just about the paramount study an overseer or superintendent must look to today as his number one item. Years ago the overseer or superintendent could proceed with most any idea he wished to put into effect, but now with so many people to talk to before anything can be done—shop committeemen—union officials—as well as your own employer to sell your idea to him—it is the man with outstanding personality who is going to lead the procession—and incidentally draw the most salary.

LAST WEEK we passed through a town where there are several mills belonging to one of the outstanding firms of the South. In front of the employment office at one of the plants we saw this sign in large poster size letters which could be read at a great distance:

"NO HELP WANTED"

I cannot explain why, but that sign just seemed to slap me in the face. It gave me a depressed feeling—in fact, it gave me the impression of having my feelings hurt. That was, I suppose, because I was putting myself in the shoes of the weavers, the fixers, the spinners and doffers who would journey to that employment office in the hopes of finding work and then get the same shock as I did when they turned the corner and faced that sign: "No Help Wanted".

No need to advance another foot. No need to go see the employment agent and ask if he wouldn't take my address and notify me if he ever did need a weaver. If he ever did need a weaver! I wonder. Yes, I suspect that *some time* he will need a weaver. "No Help Wanted". Surely it could be said a little softer.

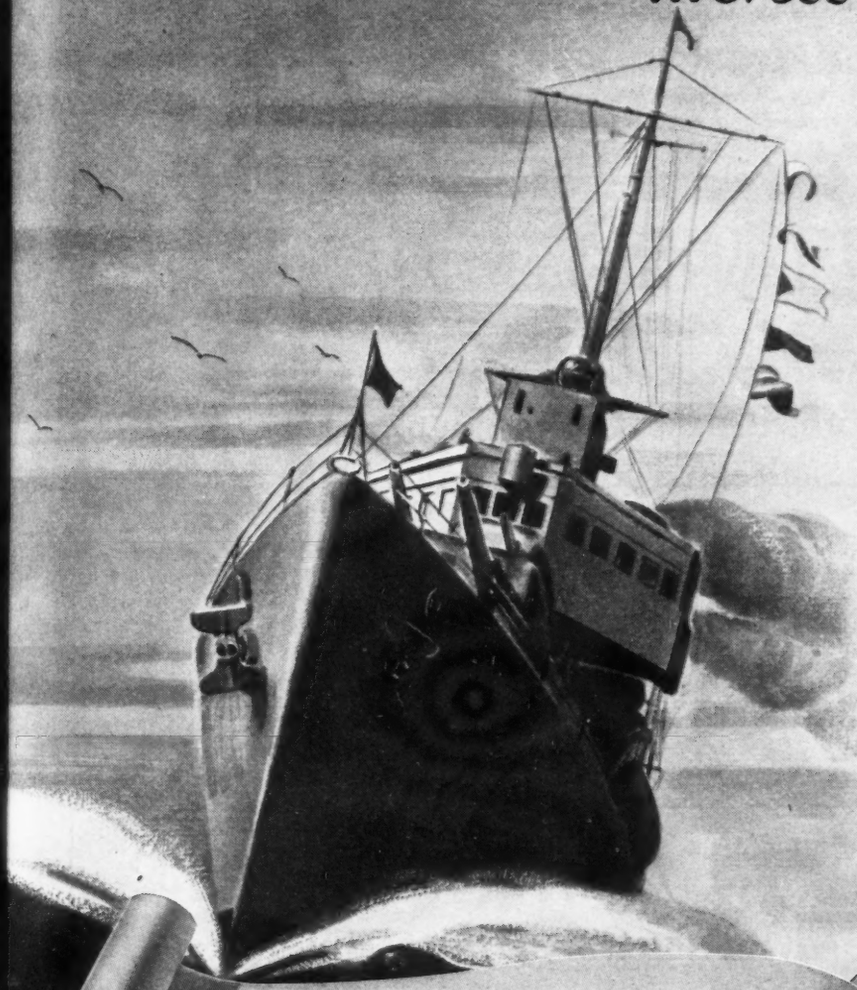
In fact, if that employment manager was working for OLD-TIMER he would be instructed to meet those people who were turned away by that sign and greet them with a smile: "Sorry, lady, we happen to have all the spooler hands we can use today, but I would be glad to have your name and address and let you know when or if we can use you."

"No Help Wanted"?—I wonder!

NEITHER wars, depressions, prosperity, labor shortages or anything else can affect the eternal wisdom of the slogan: *Knowledge is power!*

PROTECTION IN TRANSIT

...'Cross Ocean or 'Cross Town



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Only when you get a sample in your own hands can you realize that a *paper* can be so strong — so tough — and impervious to moisture. Write for sample.

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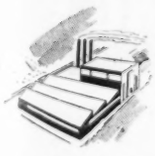

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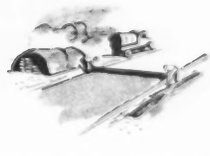

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HOW OTHER MEN MANAGE

Cleaning and Dressing Spinning Room Belts

EDITOR COTTON:

I note the request of "CONTRIBUTOR No. 7269" on page 110 of the November 1941 issue for information concerning the cleaning and dressing of spinning room belts.

In some spinning rooms the problem of machine oil getting on leather belts driving spinning frames arises, and like most other mechanical ills should be attacked at the source. That is, steps should be taken to prevent the oil from coming out of the motor so that a continuation of the escape of oil from the motor will be prevented. This is a job for the master mechanic and can be done with a reasonable degree of ease and in the end it will be much cheaper and better to remedy the cause than to try to effect a cure.

When belts come in contact with oil, on account of their porous nature they absorb the mineral oil which tends to rot the hide fiber, and when the belt flexes over the pulleys this causes deterioration in the leather. Also, the oil lowers the coefficient of friction between the belt and the pulley, causing the belt to slip, and as slippage occurs, the face of the belt burns, is soon cracked, and before long breaks, leaving the impression that the belt was short-lived.

Where belts are oil soaked and there is an accumulation of grease, lint, etc., on the running surface, the belt should first be cleaned with unleaded gasoline or carbon tetrachloride; the latter is preferable because it is non-inflammable. Soaking the belt over night in either of these substances is a good idea. After the cleaning fluid is removed and the belt allowed to dry thoroughly it should be wiped clean and then treated with a good liquid leather belt preserver.

When the belts are put back on the pulleys they should be installed with enough tension to carry the peak load without undue slip, but at the same time they should not be so tight as to stretch the belts excessively or to overload the bearings.

After the belt is back in service it should be cleaned daily or twice daily to prevent an accumulation of lint and other foreign matter, and this can be accomplished by holding a rubber block or piece of old auto tire on the inside of the belt while it is running. This will neither injure the belt, take much time, nor cost anything appreciably.

Correct tension plus an occasional judicious application of a good belt preserver applied in small quantities at frequent intervals, with the belt being allowed to stand for several hours before running, together with regular and frequent cleaning, makes a program which is easy to carry out, which will insure complete belt satisfaction and in the end save money.

CONTRIBUTOR No. 7270

WE INVITE our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing.

Mechanical and Actual Twist in Warp Yarn

EDITOR COTTON:

In making 14s warp yarn on a tape-driven spinning frame, with the travelers in good shape and the rings in fair condition, what should be the difference between the mechanical and actual twist per inch? What should the variation be in per cent and should it be more or less than the mechanical; by mechanical I mean the twist gear divided into the constant, as compared to the actual count on the twist counter.

CONTRIBUTOR No. 7316

Clean the Underscreens

"Wash" says one way to prevent neps is by cleaning the underscreens, which should be done at grinding time . . . . . .

EDITOR COTTON:

This letter has reference to the question of "CONTRIBUTOR No. 7232" on page 104 of the July 1941 issue of COTTON, who wishes to know how he may get the results of double-carding without actually double-carding the stock, and gives his manufacturing specifications.

I wonder how many readers of this department have considered this question; he makes the confession that his chief trouble is the amount of neps in the work.

"CONTRIBUTOR No. 7253" has given an answer to "CONTRIBUTOR No. 7232" on page 164 of the October issue, in which he points out that to remedy the trouble "CONTRIBUTOR No. 7232" should inspect the pickers to see if any of the machines are making neps.

Allow me to put the following question to these two men: "How often do you clean the cylinder underscreens?" I feel sure that the answer will be "not very often".

For the moment, let us assume that a card is stopped for grinding: The card is stripped and brushed, next the foreign matter is removed from the sides of the cylinder and doffer. Next, the grinding wheels are inspected, cleaned and oiled and then the wheels are set to the cylinder and doffer.

There is not one reader but who will admit that a certain amount of oil from the grinding wheels will be spread on the underscreens. When the card is started the fibers not acted on by the doffer and taken around a second time collect on the underscreens and cling to the oil on the screens and pile up to such an extent that the cylinder wires collect them in clusters, and then neps are caused.

The foregoing is a daily occurrence in every cotton mill. If the reader has worked in a card room a few years he will agree with the writer when he states that the underscreens are not cleaned for years in most mills.

Underscreens are rigid, well constructed and fitted so that it is little trouble to replace them after cleaning. The best method for cleaning them is to mix water and kerosene 50-50. After cleaning give the surface a good rubbing with graphite and the result will be a sliver free from neps. Underscreens should be cleaned at every grinding.

Let the reader try the foregoing and he will have very few neps.

To every man at the helm of a cotton mill, I advise that he have the grinder remove just one underscreen and there will be a surprise in store for him.

This is another one the research department has missed.

WASH (R. I.)

Weave Room Seconds (Loom Out of Line)

EDITOR COTTON:

I have seen the question of "CONTRIBUTOR NO. 7249" on page 95 of the August 1941 issue of COTTON; this man wants a discussion of seconds in the weave room.

In the weave room there are many seconds caused if the loom is out of line and more power is put on to make it run. This will cause the loom to break filling, and will also cause the shuttle to become rough, and in turn the rough shuttle will keep cutting out the warp, and every time the weaver draws in the end he will have a bad start-up. Also, this gives the weaver more chance to get oil on the cloth.

When the loom is out of line it will cause false changes and this will make mispicks in the fabric.

Mr. Weave Room Boss, every time you have a roll of seconds that have the foregoing defects, go and check the loom and most of the time you will find it out of line, has too much power, crooked and unparallel pickers or worn leather on the binders, which is the result of too much binder spring. All of these will make the loom break filling or jerk it in the cloth on the change.

To remedy the trouble, when the fixer puts in a new shuttle, have the supply clerk make out a card and put the fixer's name and date on it so that the boss can check this shuttle and loom to see if the loom is in line. It should be checked occasionally for about six weeks.

CONTRIBUTOR NO. 7313

Loom Fixing Notes

Setting Take Up Motion

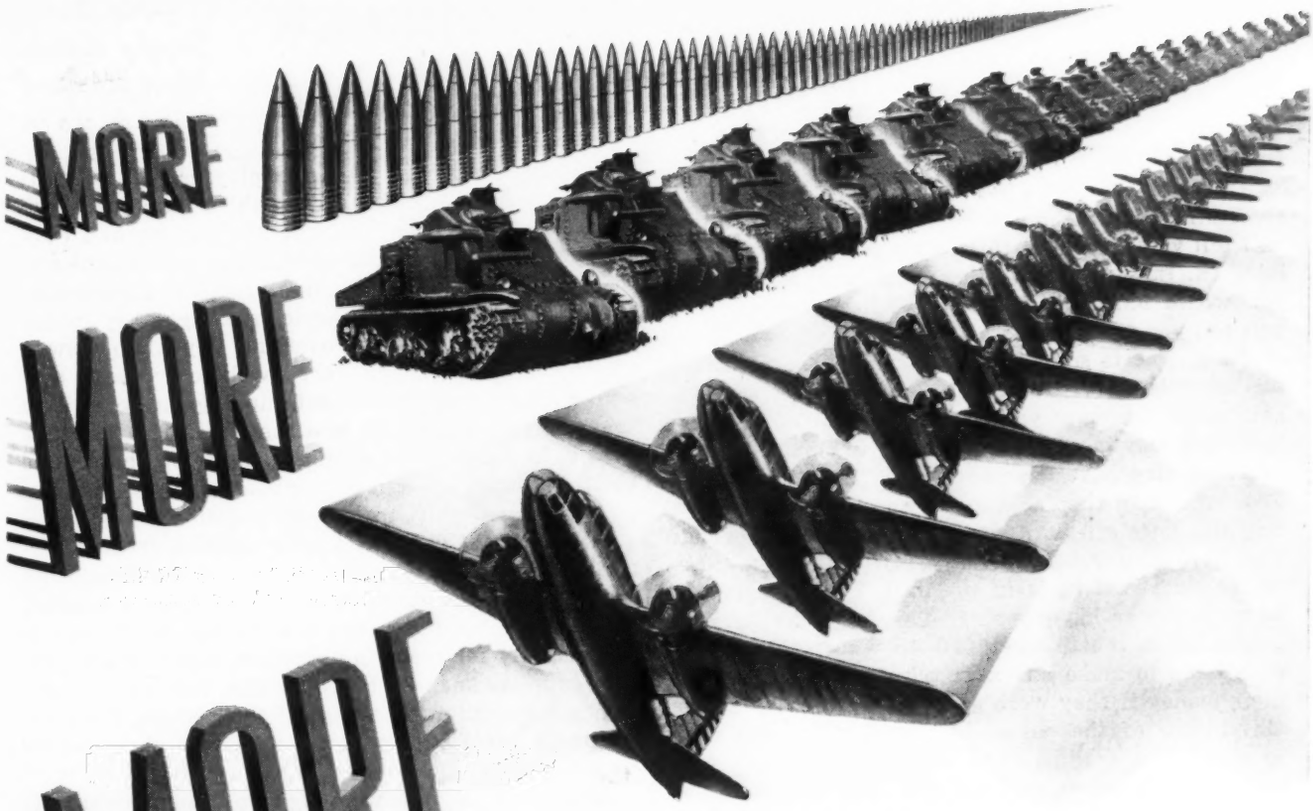
There are various take up motions, but they all come under one of two classes. The one class is positive motion and the other is negative motion. A positive motion is one through which the gears operate one tooth to revolution of the loom, regardless of the size or quality of the filling. A pick wheel or gear with as many teeth in its circumference as there are picks to the inch in the goods revolves in the stud fasten to the cloth roller frame. A pull pawl, which is held in position on a stud fastened to an arm on the rocking shaft, pulls once every revolution of the loom and makes one pick; or rather draws the pick wheel one tooth in circumference, with each revolution of the loom. Sometimes it is necessary to have the pull pawl take two teeth to each revolution of the loom, i. e., where only a few picks per inch is required, and the proper pick wheel is not on hand. Thus if it is required to put 40 picks into the goods and the pick wheel is not on hand, use an 80 gear and set the pull pawl to pull two teeth to each revolution of the loom.

The negative motion operates in conjunction with the reed. If the filling is fine, the reed will not work back as much as when it is heavy of course. The farther the reed works back when it touches the goods the less the pick wheel gears will take up and vice versa.

Sometimes it is necessary in box loom jobs or filling striped jobs to put the double amount of picks into the goods for the width or a stripe. In this case attach a cord or strap to a harness strap or jack and fasten the other end to the pull pawl. Peg the harness pattern so that this jack will lift every other pick. This will bring the pull pawl out of contact with the pick wheel and thereby make double the amount of picks.

Causes of Broken Picks and Mispicks

1. Harness or box pattern chain is not properly constructed.
2. Vibrators are broken or bent or vibrator shoe is loose or broken.
3. Harness chain bars are bent or risers are broken or shifted.
4. Too much or not enough tension on the filling.
5. Bad quilling, hard or soft quills.
6. Shuttle rebounds in boxes, or boxes are set too tight.
7. Filling fork is sharp or bent out of shape, prongs are too long or short or engage too far into the rake.
8. Shed is too high or low, late or early.
9. Too much or not enough pick.
10. Loom picks early or late.
11. Race plate is worn in the boxes.
12. Picker is worn or picker stick is broken.
13. Not enough spring tension on the picker stick to bring it back to its proper position after the shuttle is thrown across the lay.



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Letters from a New Overseer to a Second Hand Back Home

—No. 2—
Supply rooms, labor laws and mixed yarn

Dear Frank:

In my last letter* I believe I promised to tell you something about the labor situation here. Well, I will tell you a little in this letter and save some for later on. In some ways things are so different that you would hardly believe what I have to say, so I will tell you just a little at a time.

In this state some of the labor laws are not like the labor laws in your state. For example, we cannot "dock" an employee for making bad work. Perhaps this may be a good thing, for in some cases an overseer may have been sore at a "hand" and fined him more than the facts in the case warranted. The only thing we can do here is to send the worker out. You have to pay him for all the work that he does, or the time that he is in the mill. You have to pay an employee on his own shift. This is good especially in regard to the third-shift help who would otherwise have to make an extra trip to the mill to get their money if they were paid during the day at the convenience of the paymaster. And right now with so much of the third shift made up of people who live 20 to 40 miles from the mill they would be put to considerable extra expense and trouble to get their money.

As you already know the Beta Mills has a contract with a very strong union. Of course I cannot tell you all of the troubles which preceded the granting of this agreement, but I can say that at the election held by the Labor Board to determine the bargaining agency enough of the eligible employees failed to vote to allow the "A" Union to win, although most of the better class employees preferred the "B" Union, if they had to belong to a union at all. So the choice as determined by the Labor Board Election, which election was entirely fair, did not represent a clear majority of the eligible employees. Who is to blame? Well, no one except the employees who did not manifest enough interest to cast a ballot. So much for that.

I understand that the Alpha Mills have large Government contracts just as we have here at the Beta Mills. Have you had any trouble meeting the requirements as to paying for overtime? It is a funny thing, you try to accommodate people, then one day an inspector turns up and finds that you owe them a lot of overtime. You know the employees on the second shift have no opportunity to attend shows or other forms of entertainment, for most of that sort of thing takes place in the evening when they are working, so the younger people, especially, were frequently getting some one on the first shift to swap with them so that they could go to a show or attend a dance. The second-shift employee would come in on the first shift, say, on Wednesday, and the first-shift hand would stay out and come in on the second shift. Then they would both come in on their own shifts the next day. This arrangement was solely for the benefit of the employees, yet the mill was forced to pay the second-shift hand overtime when he came in on the first shift as he had only eight hours rest between shifts. The mill was therefore forced to discontinue this practice of accommodating the second-shift people, although they insisted they did not want the overtime pay when a swap was made for their benefit. Now the only way a second-shift girl can have a date during the week is to get off from work and lose the time. The result is that it is hard to get people to work on the second shift, and that you can expect some of those who are on the second shift to lay out occasionally.

Do you still get all of your supplies from a central supply room? Our system here at the Beta Mills is somewhat different. Of course we have a central, or main, supply room, but it is rather small, and is used mainly for receiving supplies, and to store general supplies such as bolts, screws, belting, brooms, lights, tags and other things of this nature. Each department has a supply room or storage place for its own supplies.

For example, the weaving department, which is located on three floors, has a supply room on each floor, where are kept complete stocks of loom parts, shuttles, pickers, lug straps and so forth. When a fixer needs a part he shows the old part to the head loom fixer or one of the second hands, and goes to the supply room on his floor and gets the needed part. Parts which can be repaired are taken to the supply room ,but a loom is not held for a part to be repaired if there is a part in stock. Of course the loom is held for parts such as the crank shaft. Naturally this system puts a lot of responsibility on the overseer and the second hands to prevent the waste of supplies. Supplies are usually charged to the departments from the invoice and are brought into the room and stored until needed.

The main supply room is open for only a comparatively short time on each shift at which time each department can get any necessary supplies not carried in their own storage places. The supply keeper also has charge of roll covering so he is kept busy at all times.

The main advantages claimed for this system include a minimum of loafing at the supply room by the section men and a better opportunity for the overseer to watch his stock of supplies. As to the first advantage, if a section man in the spinning room has to go out to the supply room every time he needs something he meets some of the loom fixers and the card grinders, and sometimes for 15 minutes they will discuss a fishing trip, or how the "Yankees" came out the day before, or what the local team is going to do Saturday. But when the supply room is open for only an hour this sort of thing is discouraged. As to the overseer watching his supplies, if his main supplies are kept in his own department he alone is responsible if something runs low, and can-

*Published on page 81 of the November 1941 issue of Cotton.

MOBILIZATION
means more
MODERNIZATION
and more efficient
MAINTENANCE
of Textile Mills

When we issued a "Textiles in National Defense" number in October, 1940, we tried to point out some of the effects on the textile industry of supplying clothing, sheets, blankets, hosiery and underwear, tents, tarpaulins, parachutes, sandbags, etc., for an Army of 2,000,000 men. As foreseen, this Defense demand on top of civilian needs brought the highest production figures on record for textiles in 1941.

For 1942 it is no longer an Army for Defense but one for actual combat, and the sights have been raised to 6,000,000 men. Priority and Procurement officials indicate that every effort will be made to keep textiles running at top speed to meet the new demands.

Top-notch efficiency in production means a premium on plant and equipment MAINTENANCE, as well as replacement of worn-out machinery and MODERNIZATION for increased output wherever this can be accomplished without taking away from actual armament needs.

February Annual MODERNIZATION & MAINTENANCE ISSUE

Full textile MAINTENANCE will be discussed in the February issue of *COTTON, Serving the Textile Industries*, including maintenance of mill equipment, mill buildings, mill villages, power facilities, auxiliary equipment, housekeeping and safety, fire protection, speeds and production, and village cleanliness. These articles will be prepared by a group of executives of the Avondale Mills. With ten large plants in seven Alabama towns, containing over 250,000 spindles and several thousand looms, these mills handle every phase of processing cotton, rayon staple and wool, including dyeing and finishing. In addition, other maintenance articles will cover methods in a modern seamless knitting mill and in an up-to-date full-fashioned plant.

MODERNIZATION will include pictorial presentation of outstanding installations of 1941 and articles on enlargements at the dyeing, bleaching, and finishing plant of the Trion (Georgia) Company and the new dyehouse for wool at Peerless Woolen Mills, Rossville, Georgia. ***COTTON, Serving the Textile Industries, is read and followed by the largest number of paid subscribers of any textile paper among the mills in the United States. Your advertisement in this issue will place your products and services before the actual mill buyers throughout the industry at a time when they are interested in efficient Maintenance and Modernization for "full-speed-ahead."***

FORMS CLOSE JANUARY 24TH

COTTON *Serving the Textile Industries*

GRANT BUILDING, ATLANTA, GEORGIA

not pass the buck to the supply keeper.

Both systems have their good points, and while I know you would argue like the mischief for a central supply room, yet the other system is working fine here, and I am not ready to suggest that it be changed—even if I thought my suggestion would receive any consideration. When a fixer does not have to leave the room to get supplies to fix a job, the waiting time of the machine is definitely reduced.

What do you thing of the policy of paying an employee for finding mixed yarn? While I believe both the Alpha and the Beta Mills have a policy of paying an employing for finding mixed yarns or singlings, the Beta Mills cannot fine an employee for mixing yarns, because of the state law which I have already cited, but you at the Alpha Mills may fine an employee for this offense if it seems necessary. There is a difference of opinion among the foremen here as to the value of this practice. Some of the overseers contend that to pay an employee for finding mixed yarns encourages certain unscrupulous individuals to "find" mixed yarns which they, themselves, had mixed. My contention is that while this sort of thing may have happened occasionally, yet the finding of one box of mixed filling before it gets into the cloth more than offsets the amount paid for a half dozen boxes which might have been mixed for the purpose of being "found" later on. Somehow I have too much confidence in the integrity of the majority of our folks to believe that they would be guilty of deliberately mixing yarns just to get a quarter. Now there may be some folks who just don't give a d——, but they are too honest to mix yarns on purpose.

Give my regards to the other second hands when you have a meeting.

Your friend,

JOHN

Running New Cotton

EDITOR COTTON:

What is the best routine or system to use when changing from last year's cotton crop to this year's crop in the mill? That is, how do you work it in?

CONTRIBUTOR NO. 7285

EDITOR COTTON:

A very satisfactory procedure in changing from one year's crop of cotton to another is to turn down one bale of the new crop of cotton with, say 9 bales of the old cotton, in the opening room. This proportion of new and old cotton should be increased with caution until at the end of six weeks or two months the old cotton has been entirely replaced by the new stock.

I have also seen the new cotton subjected to a drying operation so that the greenness may be eliminated. This process materially helped in processing the staple, but seemed to leave it in a wiry or brittle condition. Therefore, my judgment would be by all means to adopt the policy of mixing the two crops in a small ratio and to gradually change this ratio so that more of the new crop is used later.

CONTRIBUTOR NO. 7304

Between Smokes (Overheard)

IT IS NOT the individual variation in weight of the picker laps that matters—it is the average weight of the total day's run, compared with the day before or the day after.

Suppose the standard is 40 pounds, with a half-pound each way allowed, and on a given day's run the average is exactly 40 pounds. Good! But suppose on the next day the average is just above 39½ pounds, and on the following day just below 40½. It should be plain that the numbers will be light at the drawing deliveries on one day and heavy the next.

These heavy and light runs will be all mixed up in the roving frames and spinning. The boss will be in the picker room, weighing laps and accusing picker operative of not keeping his laps within the limits of variation allowed, when it was all a matter of different average weights for different days' runs.

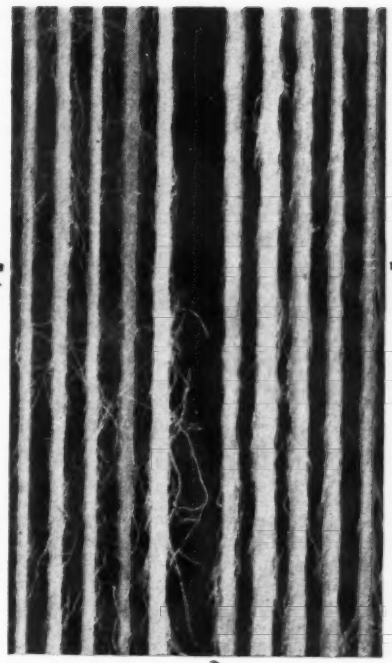
LAPS WEIGH fairly even, yard by yard, but how about the inch by inch evenness? Hold the picker lap up to light and see what a whale of a difference there is from inch to inch. And don't forget, an inch of lap makes more than three yards of card sliver! Here is that unevenness, at the very beginning, which makes necessary all those doublings in later processes.

Doublings are an evil from every standpoint except that they do produce evenness, and we will have to have them until we get a picker that will make a lap that is even inch-for-inch.

HOW MANY card grinders know that when the flats have to be pushed up a great amount, such as when re-clothing, each flat stand should be raised a little bit at the time until all stands are lifted to the proper height. It would seem that there are many who do not know it, judging from the condition of some of the flexible bends on the cards in mills. Pushing up one stand far ahead of the others destroys the proper curvature of the bend, and then you have a card on which a proper setting of the flats is impossible. The flats should be raised by working from the center stand each way, one turn of the nut at a time, until all stands are raised.

THE OLD TYPE belt hook has been time-tried and is still a mighty good fastner for cotton mill conditions. But it does seem that after more than 40 years of use, fixers would know enough not to hammer 'em out flat. Hammer the belt and not the hook, and *always* keep the *curve* in the hook.

STANDARD PRACTICE in many mills is to keep numbers by changing the crown gears on drawing frames and speeders. This is an excellent practice, but it is a heck of a lot of trouble to the fixer to pick over and sort out his gears when getting ready to change. A good idea is to have the different numbered gears painted different colors—say black for 100 teeth, red for 99 teeth, blue for 101 teeth, etc. This saves a lot of time, and besides, it is almost impossible to make a mistake. Then too, the boss can take a quick look to determine if the proper gear has been put on.



BETTER SIZING

plus ... a great service

Which warp would you want to run in your mill to increase production? On the face of it you would pick the smooth HOUGHTO-SIZE'd warps shown on the right, because they have better fiber lay . . . resulting in fewer loom stops . . . higher weave-room efficiency.

But fiber lay itself is only one feature of proper sizing that helps step up production. Increase in breaking strength, decrease in elongation and low kettle costs are equally important—all obtained to an unsurpassed degree with HOUGHTO-SIZE.

Combine this size softener with Houghton's technical field service and laboratory Check-up Test, and the combination of the three, as offered only by Houghton, will be helpful to the mill man whose management holds him responsible for efficient, speedy slashing and weaving.

To get the full story on HOUGHTO-SIZE and increasing weave-room efficiency, ask the Houghton Man, or write to

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FOR COTTON WARPS

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The Keever Starch Company, Columbus, Ohio

"SHOP TALK" is the language spoken by a particular industry. It should be spoken just as correctly as any other language. So why not teach our operatives the proper talk of the textile industry. Cock an ear and listen to the picker man call the calender rack a "headblock", the card grinder speak of the "slats" when he means the card flats, the frame operative asking the fixer to bring him a new "steward" when he has a broken skewer. And so on, all through the mill. Educate 'em. Teach 'em to call the parts by their proper names.

THE MOST COSTLY waste in a cotton mill is the thread waste, made at the winders or spoolers. A good overseer can often be worth his wages many times over just by keeping thread waste down to its lowest possible limits.

A GOOD SYSTEM of paying-off the operatives goes a long way toward keeping them contented. Each mill seems to be a law unto itself in this respect—no two being alike. Some have very good systems, but other systems are poor. This might be a good subject for discussion at some of the meetings of mill men.

DRAWING FRAMES with metallic rolls should be weighted progressively heavier from front to back. We should have known this long ago. But only a short time ago a certain carder and spinner made a big reputation for strengthening the yarn in his mill —when all the change he had made was to correct one mistake of his predecessor. The heavier weights were in front and the lighter ones at the back. This overseer put them where they should have been, with the lighter ones in front and the heavier ones at the back, which resulted in a wonderful increase in the breaking strength of the yarn. He kept mum and wouldn't tell anyone what he had done, so in that mill he was looked upon as some sort of a wizard.

ROSE

Running Pieces

One man's opinion on handling pieces from back of slubber . . . . . .

EDITOR COTTON:

What method is best for running pieced-up cans from creeling slubber? Running a few ends at the end of each slubber or re-running all pieced cans through drawing?

CONTRIBUTOR NO. 7287

EDITOR COTTON:

It has always been my contention that the pieced cans of sliver resulting from creeling the slubber should be run through the finisher drawing. This is done by setting one can of the pieced slubber sliver behind the finisher drawing frame with five cans of the regular intermediate drawing. This is not practical when the weight of the intermediate drawing sliver is different from the weight of the finished drawing sliver.

With the number of doublings during the succeeding processes becoming more and more curtailed, it is essential that the roving from the slubber be as nearly perfect as can be. This, as well as every other procedure in the cotton mill, depends almost entirely upon the care and skill of the individual operative.

CONTRIBUTOR NO. 7306

Contraction and Crimp

THE FOLLOWING question by "CONTRIBUTOR NO. 7289" appeared on page 119 of the December 1941 issue of COTTON. It concerns figuring yarn contraction:

EDITOR COTTON:

There seems to be quite a difference of opinion as to the method of figuring the contraction of yarn in a piece of cloth such as leno, lappet, or seersucker. We would like to hear from some of your readers as to how they would figure the following:

Using a seersucker stripe, for example, a piece of seersucker cloth six inches long, a thread is taken from the seersucker stripe and when wet and straightened out, measures 8 inches long. What is the percentage of contraction of yarn in the seersucker stripe

We figured as follows: Subtract cloth length from thread length and divided the remainder by the thread length. 8—6=2÷8=25 per cent contraction.

We are told we should divide the difference between the cloth length and the thread length by the cloth length, i. e., 6 inches.

Which method is correct?

CONTRIBUTOR NO. 7289

To date there have been three answers to this man's question and they are quoted as follows:

EDITOR COTTON:

I have noted the question by "CONTRIBUTOR NO. 7289" on page 119 of the December 1941 issue of COTTON, and I am in accord with the method *used* by "CONTRIBUTOR NO. 7289" and not the one *suggested* to him, unless he is seeking the "elongation".

Contraction, in my opinion, would be based on starting with 8 inches of thread and having it contract two inches, which would be a percentage of the original length left. Whereas, in the other method, we compute the elongation of the yarn after it is taken out of the cloth, thereby increasing the length, which would be six inches in the cloth.

Therefore, I think when computing contraction, one must start with the length of the yarn before weaving and any contraction would decrease the length based on a percentage of the original.

CONTRIBUTOR NO. 7319

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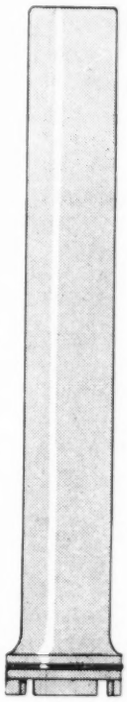
EDITOR COTTON:

In reply to the question of "CONTRIBUTOR NO. 7289" on page 119 of the December 1941 issue, I refer him to page 380 of the 1941, third edition, of *Industrial Fabrics* by George B. Haven, published by the Wellington Sears Company: "The extension of the fabric by the straightening process in terms of its original length in the fabric is called the 'crimp'. If the extension described above is rated in per cent of the

U.S.S. NORTH CAROLINA

BATTLESHIPS and BOBBINS



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TERMACO'S smooth-running qualities, at high speeds, produce uniform yarn. Their consistent uniformity and smooth, highly polished surface insures even tension and protects roving. The familiar TERMACO trademark is your assurance of high quality, low cost production.

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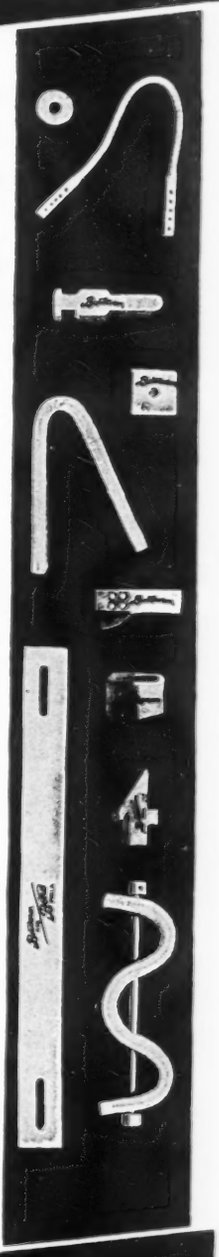

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straight yarn length, the term 'take-up' is applied to the result."

Also, refer to *A.S.T.M. Standards on Textile Materials*, October 1941, page 2, in which crimp is defined the same as in *Industrial Fabrics*. These definitions are independent of the style of the fabric.

Contraction, on the other hand, is synonymous with take-up and is defined and calculated in the manner presented by "CONTRIBUTOR No. 7289". In the last paragraph of the contributor's letter, the calculation in which the difference is divided by 6 inches would give the crimp.

CONTRIBUTOR No. 7320

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EDITOR COTTON:

In answer to the question by "CONTRIBUTOR No. 7289", I wish to say that he is confused by not being familiar with the cloth contraction terms "per cent take-up" and "per cent crimp".

The term "per cent take-up" is defined as the percentage decrease in the length of the yarn in a cloth expressed as a percentage of the straightened original length of the yarn.

"Crimp" is defined as the percentage decrease in the length of the yarn in a cloth expressed on the length in the cloth.

To use the figures given by "CONTRIBUTOR No. 7289", a yarn sample having a cloth length of 6 inches and a straightened out of cloth length of 8-inches, he has shown a percentage of take-up of (8—6=2÷8=) 25 per cent, while his second method gives him a percentage of crimp of (8—6=2÷6=) 33⅓ per cent.

So long as the resultant figure, whether take-up or crimp is correctly labeled and understood, either may be used. Of course, if the cloth manufacturer wanted to calculate the yardage of yarn necessary to weave a given length of cloth, he would use the percentage take-up as his basis. On the other hand, certain mechanical fabrics such as hose and belt duck include in their specifications certain tolerances covering both warp and filling crimp.

Like the terms "moisture regain" and "moisture content", each has its own particular meaning and basis.

CONTRIBUTOR No. 7321

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Front Rolls Jumping on Drawing Frames

EDITOR COTTON:

I am having some trouble with the front rolls on drawing frames jumping and from the information given as follows would appreciate your suggestions on how to stop this:

The front rolls are covered with cork, run 400 r.p.m. and are weighted 36 pounds. They are kept well oiled.

All of the rolls do not jump, but it happens here and there on the front rolls and they appear to be vibrating and are making cut drawing. By changing the front roll with one on the second line or third line of rolls it stops the jumping, for awhile at least.

CONTRIBUTOR No. 7315

Drying Dyed Cotton

EDITOR COTTON:

What is the average temperature generally used in drying dyed cotton and is a higher temperature detrimental to the stock? Do most mills use some sort of softening oil on dyed cotton? If so, is the softener applied after the dyeing and rinsing operation or sprayed onto the dry cotton before the opener operation?

CONTRIBUTOR No. 7262

EDITOR COTTON:

This question can be answered more than one way. First, what type of cotton dryer does "CONTRIBUTOR No. 7262" refer to, old or new models? And what is the time required to run the stock through the dryer?

There are some dryers now which require only two minutes to run the cotton through, whereas some of the older styles require 20 to 30 minutes. My observation has been that cotton should be extracted well, removing water to 50 per cent of weight to dry cotton, and a temperature of 220 degrees F. is not injurious.

If an excessive amount of water is left in the cotton, a lower temperature should be used, as the fiber would get stiff. On newer dryers which require only two minutes for drying, higher temperatures than 220 degrees F. should not affect the fibers.

The drying of sulphur colors of the blacks and blues should take lower temperatures, say around 180 degrees F., which would keep the fibers from tendering. The lower temperature is used to prevent the chemicals from tendering the fibers.

As for softeners, I do not know of a specific mill that uses softeners. Personally, I'm opposed to softeners applied to dyed cotton on the last rinse. There is no oil which will still be an oil and a softener when the fiber is run through the dryer at 220 degrees F. If oil or softener must be used, the proper place is at the openers or pickers going to the mill. Cotton, if properly dyed and rinsed and dried, will not require softening and should be as good as natural stock.

We do give the stock a good rinse with a fatty alcohol.

CONTRIBUTOR No. 7263

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EDITOR COTTON:

I think a lot depends on the handling of the stock before it is placed in the dryer and the amount of moisture that it contains.

We do know that the higher temperatures and overdrying are very detrimental to the stock. We have had trouble carding cotton that was overdried and I find that the fibers are permanently damaged.

A very similar trouble comes from insufficient washing of the cotton before it is removed from the raw stock machines. We have had more trouble on account of this than on account of over-drying and so far as the card room is concerned it is hard to tell whether the stock was over-dried or poorly washed. Since we have increased our washing time the trouble has disappeared.

As to softeners, we do not know what the practice of most mills is, but we do use a product for this purpose. The material is applied before the cotton is removed from the raw stock machine.

CONTRIBUTOR No. 7264

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Here is the "cream of the crop" of literature on textile subjects as prepared by COTTON advertisers for aid in mill operation and management. These reference books and catalogs are free for the asking and there is no obligation involved. Read through the list carefully for booklet on the subject or equipment in which you are interested. Then fill in the numbers of those desired on the coupon on the following page and mail it to COTTON.

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103. GRADING RULES AND COMPLETE SPECIFICATIONS FOR LAYING AND FINISHING MAPLE FLOORS—MAPLE FOORING MANUFACTURERS' ASSOCIATION, Chicago, Ill.

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109. CENTRAL STATION AIR CONDITIONING—Technical Bulletin 141 on this method of textile air conditioning by manufacturers of Parks Certified Climate equipment.—PARKS-CRAMER CO., Fitchburg, Mass., and Charlotte, N. C.

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501. EIGHT QUESTIONS — Booklet of printed forms to assist mill in comparing efficiency and economic worth of new looms against older ones.—CROMPTON & KNOWLES LOOM WORKS, Worcester, Mass.

Continued on Page 104

Continued From Page 103

502. TEXTILE COUNTERS—Catalog T37 describing pick counters for looms, hank counters for spinning, yardage counters for cloth loom, etc.—VEEDER-ROOT, INC., Hartford, Conn.

503. HARNESS, HEDDLES AND REEDS—8 page illustrated booklet on steel heddles, harness frames, mail-eye harness, jacquard heddles, etc.—EMMONS LOOM HARNESS CO., Lawrence, Mass.

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603. THE MORTON SYSTEM—Illustrated literature describing the Morton Improved double circulating raw stock dyeing and bleaching machine, the Morton horizontal revolving beam and package dyeing machine and beam bleaching machine, the Morton vertical package and roving dyeing machine.—MORTON MACHINE WORKS, Columbus, Ga.

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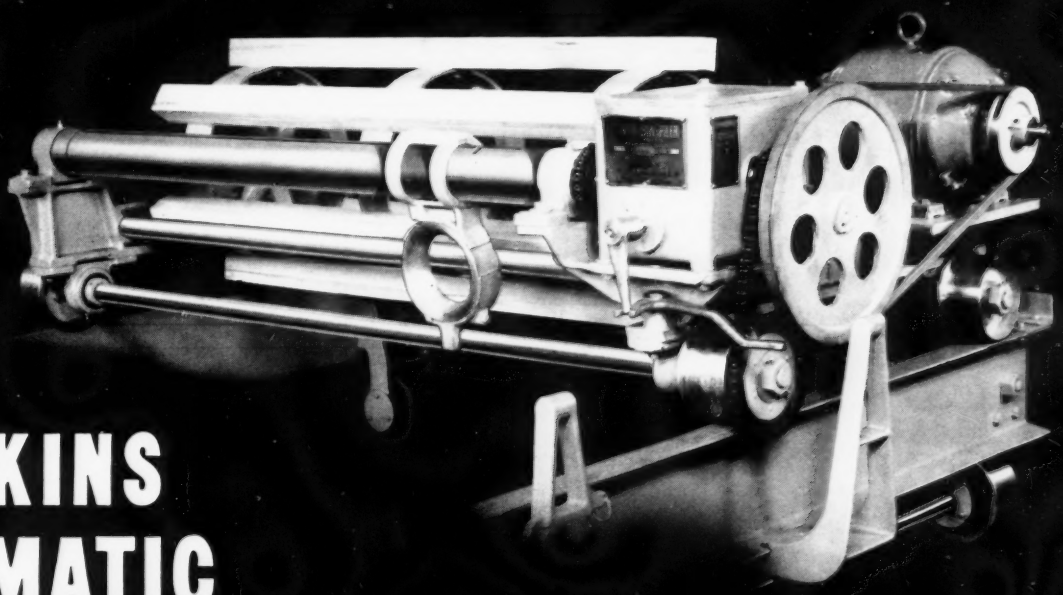

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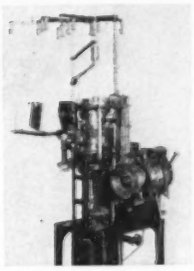
KNITTING SECTION

The Komet Machine



Article 12

IN THE PREVIOUS article of this series we covered the double feed section for a 4-inch 24-gauge Komet with reverse welt; now we shall consider the lower transfer section for a 4-inch 24-gauge machine with reverse welt. This will complete the discussion of sections which control the slider action on the lower cylinder. Insofar as the reverse welt is concerned, the various sections have no parts which differ greatly from sections without reverse welt attachments except that the races are arranged to permit passage of slider butts if and when a reverse welt is made.

Many coarse gauge, large diameter machines in use today are not equipped with reverse welt attachments, but most fine gauge machines are equipped with them. For this reason we have chosen a 4-inch machine with reverse welt attachments for discussion and the information given will apply to any diameter or gauge unless expressly stated otherwise.

Once more we come to some mechanism which makes the Komet so different from plain circular machines —mechanism which in fact makes the Komet. The outstanding difference between a Komet and plain circular machines is that the Komet will produce hose with a genuine 1x1 ribbed top and a broad rib leg and instep. This is accomplished by transferring certain needles from the lower to the upper cylinder and from the upper to the lower cylinder. The needle transferring operation is fully automatic and does not affect the efficiency of the machine in any way except that it is necessary to reduce the speed by one-third for a few revolutions while the transferring is being done.

Work of Lower Transfer Cam

Shown herewith is a reproduction of Plate 21-W of the Komet and Links and Links machines catalog of parts; two views of the assembled lower transfer section are shown. The upper portion of Plate 21-W shows the inner part of the transfer cam (204404) and the lower portion shows the transfer cam bushing (302524). The lower transfer cam while actually raising sliders upward so as to transfer certain needles from the lower to the upper cylinder works in conjunction with the dividing cam (204970), shown on Plate 24-G of the catalog.

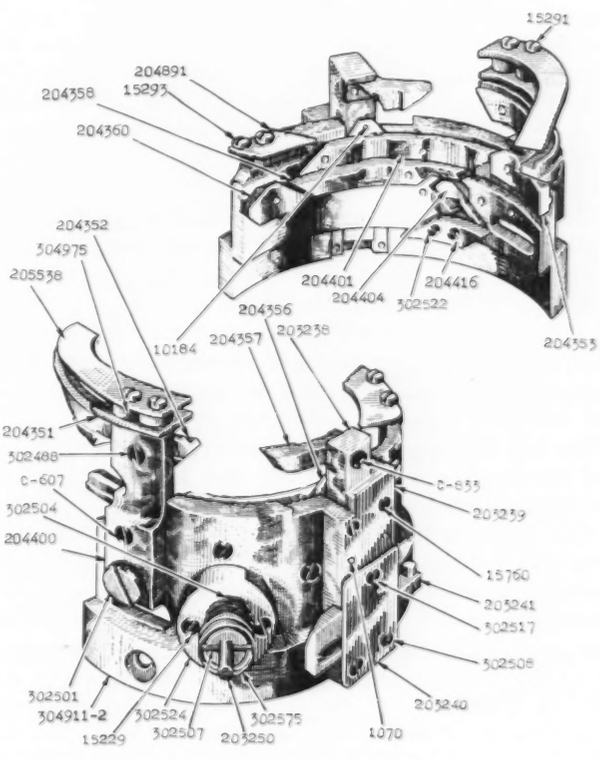
The lower transfer cam, when moved inward, contacts the slider transfer butts thus raising the sliders and needles upward to a predetermined height. The upward movement of the sliders hooks the upper end of the needle onto the slider in the upper cylinder and immediately after this the dividing cam moves the lower slider outward, allowing it to release the needle. After the needle is released the lower slider is moved down to its normal position and the up transfer has been completed.

The accompanying sketches show a needle attached to the lower and upper slider and a lower slider moved outward to permit releasing the needle after it has been transferred up. The lower transfer cam goes into action first when draw thread knitting takes place and the welt is being made. This action calls for every alternate needle being transferred to the upper cylinder in order to make the welt and the 1x1 rib top. (See Figs. 1 and 2 on following pages.)

The next move of the lower transfer cam is at the time when 1x1 top knitting stops and the broad rib leg knitting begins. At this point (known as the double transfer) certain needles are transferred from the lower to the upper cylinder and others from the upper to the lower cylinder. Both up and down transfers are made simultaneously; the respective needles being transferred are controlled by the slider set-up in the respective cylinders. We shall consider the upper transfer cam a little later.

PLATE 21-W KOMET

LOWER TRANSFER SECTION FOR A 4" - 24 GUAGE KOMET MACHINE WITH REVERSE WELT



Lower Transfer Cam Adjustments

It is of greatest importance that all settings and adjustments which control the movement and position of the lower transfer at the respective points of action be absolutely correct. Faulty adjustments here mean damaged needles and sliders, seconds, waste and possible damage to machine parts, as well as losses in production.

Unfortunately it is impossible to *see* whether the lower transfer cam is raising the sliders high enough or too high; likewise we cannot see whether or not the transfer cam moves *in* the proper distance at the respective positions.

This means that we must learn to determine when adjustments are correct by feel and judgment of distance and not by guess. The various cams on the quality drum which provide motion for the lever which moves the lower transfer cam, are designed to move the cam inward the proper distance at each of the respective points when the lever adjustments are right. If and when the lever adjustments are changed it is important to check the clearance of the transfer cam at each position. Ordinary wear and constant use make it necessary to change adjustments slightly at times.

At *each* position the transfer cam should be *in* as *near* to the butts it should *clear* as possible; this permits the cam to take a full hold on the butts which are to be raised, thus reducing butt breakage caused by poor contact. All Komets use three different lengths of transfer butts on the sliders in the lower cylinder, long, medium and short. When the first up transfer is made the transfer cam moves in far enough to raise all medium and long transfer butts; it should clear the short butts by not more than 1/32-inch.

The second up transfer is the double transfer where needles are transferred up and down—at this point the lower transfer cam moves fully in to just clear the cylinder raising all sliders with transfer butts, long medium and short. As the double transfer is being completed the transfer cam moves out by spring action far enough to clear medium butt sliders and raise the long butt sliders. When the last long butt slider has been raised the transfer cam moves fully out.

From 5 to 6 long transfer butt sliders are generally used, depending on the diameter and gauge of machines. These are necessary and their location is important especially at the double transfer. At this point the transfer cam moves *in* in time to raise the first long butt slider and then moves fully in as the remaining long butt sliders ride up on the cam. As the double transfer is completed the transfer cam moves out while long butt sliders are passing over it and moves fully out when the last long butt slider has been raised fully up.

The position in the lower cylinder at which the long butt sliders are placed is important and this position is not shown on the slider pattern set-ups which are used when making pattern changes. The location of the long transfer butt sliders is determined by the *time* at which the transfer cam moves in at both up transfers and out at the double transfer and this element of timing is a determining factor as to the number of long butt sliders necessary.

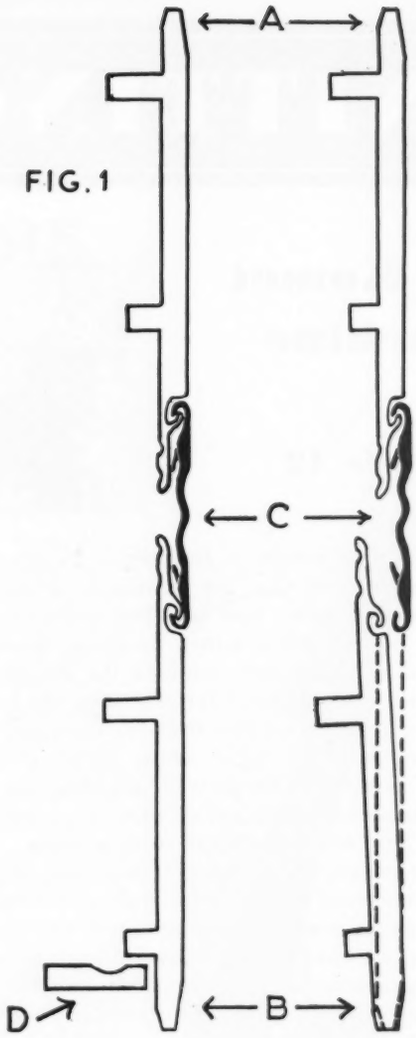


FIG. 1 FIG. 2

Should a pattern change be made from a 3x3 to a 6x6 broad rib, the position of the long butt sliders should not be changed; in other words, the position of the long butt sliders remains the same on any set-up.

Two types of cams are used on the quality drum to supply motion to the lower transfer cam. On some machines these cams are located on the face of the quality drum; on others they are located on the side. Irrespective of their location they supply movement in a like manner and the relationship of the pawls or fingers which ride over these cams is the same. By this we mean that at the end of a forward move by the quality drum the lever or finger which rides over the cam should stop directly in front of a cam and then move up on a cam and then fall completely off a cam. At no time should a lever ride *partially* up on a cam and remain in this position until another move of the quality drum is made.

Advancing or retarding the ratchet wheel which moves the quality drum will change the *time* in relation to lower cylinder movement at which the lower transfer cam moves in or out. Bear this in mind when drum movement is altered for any reason.

Do not overlook the fact that proper friction on quality drum has much to do with the in and outward

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movement of the lower transfer cam. Too much friction is just as bad as too little. There should be just enough friction to keep the drum movement under control at all positions. Correct timing is an important factor and must be carefully considered at every point where the lower transfer cam moves *in* or *out*. Many minor troubles which occur when up transfers are made are caused by faulty adjustments which cause improper timing. It is not unusual for a fixer to adjust a machine *out* of one kind of trouble and *into* another if he fails to give full consideration to the element of timing.

Lower Transfer Cam Bushing

The lower transfer cam bushing (302524) serves a dual purpose. It acts as a guide for the transfer cam and provides a slight amount of up and down adjustment for the transfer cam. When your machine leaves the test line, the lower transfer cam has been fitted, adjusted, checked and tested to make certain that it will raise sliders high enough to assure hooking of needles onto the sliders in the upper cylinder. Here is one place where *close* doesn't count—the adjustment is either right or wrong and when it's wrong, brother, you have trouble.

Bear in mind that the lower transfer cam *must* raise the sliders high enough to allow the upper end of a needle to enter the hook on the slider in the upper cylinder. If the needle fails to hook onto the slider the transfer will be incomplete and the needle and sliders will suffer damage. Each slider which has been raised by the lower transfer cam is automatically unhooked from the needle by the dividing cam as the lower slider moves down to normal position. This means that an incomplete up transfer of any needle will leave it out of control entirely since it will not be attached to either slider and therefore cannot continue to knit. If we stop for a moment and consider just what the lower transfer cam does we can readily see that the height to which the lower sliders can be *safely* raised is very important.

If we have trouble when sliders do not raise needles *high enough* at the up transfer, then we are bound to have trouble when sliders raise needles *too high*. This is not difficult to understand and for this reason we stated very deliberately that *close* settings do not count in these adjustments. Keep in mind that any slider raised by the lower transfer cam *must* go up to a certain height. The transfer cam will not give—it is stationary. The slider in the upper cylinder is also stationary and cannot move up since the knitting butt is resting against a guard cam. If the lower slider coming up raises the needle too high the needle will be bent or crushed between the two sliders. To prevent this trouble the lower transfer cam bushing is provided with a slight amount of adjustment in the screw holes which permits raising or lowering the lower transfer cam if and when the need arises.

Worn or damaged knitting butts on sliders in the upper cylinder may also cause incomplete transfers since the knitting butts control the position of the slider in the upper cylinder at the point of transfer. Clearance should be maintained until the slider is safely off of the lower transfer cam. Before we leave this very important and interesting subject of transferring on the Komet, may we state that we have little difficulty with transferring and when we do have trouble it is caused by our lack of knowledge rather than improper design or faulty workmanship. This is perhaps true with other Komet fixers as well as the writer.

Needle Raising Assembly

In addition to the lower transfer cam there are other parts which make up the lower transfer section. The needle raising assembly does for the Komet what similar parts do for other circular machines, namely, raise all long butt sliders so needles will be inactive while heel and toe knitting is going on. This device is positive in action, does not depend on springs and requires very little attention.

The post operating cam (203241) supplies the necessary lift to the needle raising cam post (203238). The raising cam (204356) raises the sliders when the post and cam are up and the cover cam (204357) lowers the sliders when the post is down. Make sure that foreign matter does not accumulate in the race of the operating cam which might prevent it from moving *fully over*. See that the adjustment which comes from the clutch lever is fully utilized.

The raising cam post must go fully up and down and failure here means slider butt breakage.

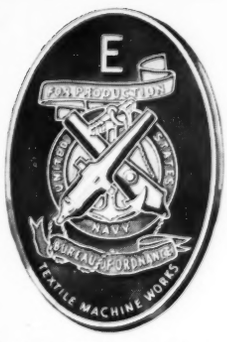
Check the various cams on this section which raise sliders or lower them at any point and keep them free from nicks or worn places. Repolishing cams anywhere on a Komet when they become rough or slightly nicked will pay dividends.

Ring Cam Gate Assembly

The gate guard cam (205538), down pick guard cam (204352), lower gate cam (204353) and ring cam gate (204400) make up the ring cam gate assembly. None of these respective parts requires much attention other than keeping them securely tight and in proper position. Loose cam gate screws (302501) will cause damage to sliders or back picker trouble. The inner and under surface of the down pick guard cam (204353) should be rounded off to prevent damage to sliders as they pass. Keep the upper surface of the gate guard cam smooth on its inner side so rib latches will not become bent when they come in contact with it. Make sure that this cam is properly placed so that the sliders will pass freely during the time of reciprocation—occasionally this cam is forced out of place by a jam-up.

And last but not least, if it becomes necessary to remove any part of the section or the whole section, make sure that all parts are properly replaced. One butt or needle hook between the section and the cover plate can and very often does cause a great deal of trouble. The little things we overlook when taking a machine assembly apart and hurriedly putting it back in place lead to some serious and often hard to find causes for real trouble. Five-thousandths of an inch is really a small amount when we think of it in terms of distance, but there are many parts and adjustments on a Komet which dare not be five-thousandths off one way or other. Tolerances in some places are practically nil.

K. O. METZ



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"To play one's cards well . . ."

FOOTE

Regardless of the fibre used, the new READING 30-section 51-Gauge Full-Fashioned Knitting Machine produces 104 per cent more volume and 156 per cent more value than ordinary 20-section 42-gauge machines . . . . *And remember: Money invested in modern machinery serves as insurance for your total investment.*

TEXTILE MACHINE WORKS • READING, PA.

Latching Full-Fashioned Hose

WHEN A full-fashioned stocking develops what is commonly known as a "runner" during the manufacturing processes or in the handling after the stocking has been made, it must be repaired by means of an operation called "latching". Latching re-knits the fabric where the runner occurred and if skillfully done makes a repair that is practically invisible.

Latching is done by means of several different types of latch needles, most of which are patented. They range from the common pick-up, or hand hook, consisting of a needle with a hook point inserted in a wooden handle, all the way to a power-driven machine which operates with great speed and efficiency. However, with the exception of the pick-up, all the rest of these patented needles work on practically the same principle. They are divided into two general classifications, however, namely hand needles and power needles.

Defects Requiring Latching

The general run of defects which require latching will be found to be as follows: runs near the seams, runs from the welt, runs from the narrowings, runs near the heel splicing, in the instep, and from the toe gusset. It is obviously impossible through lack of space to describe the method used in latching every type of runner that may develop at various places in the stocking, but as the principle involved varies very little we shall describe those which are most common.

Use of the Pick-up, or Hand-Hook

As shown in the several accompanying illustrations a runner is somewhat the same in appearance, roughly at least, as a ladder. In Fig. 1, the last perfect loop which remains is indicated by the letter "A". In latching with the pick-up, the point of the hook is inserted in the last perfect loop at the bottom of the runner and then pushed upward to grasp the first thread above. This is accomplished by placing the hook under the thread and then twisting the pick-up in such a manner that the hook will move up over the thread and securely grasp it. The hook is then twisted with a rolling motion toward the operator and the thread drawn through the loop which has been previously placed on the shank or body of the pick-up. The next thread above is then grasped with the pick-up and the operation continued in the same manner until the entire runner has been latched up. This method, however, cannot compete with the patented needles due to the fact that they perform the work automatically, just as efficiently, and very much more rapidly.

In latching with a patented latch needle such as the one shown in the Fig. 2, the hook on the needle graps the thread shown at "C" in Fig. 1 and pulls it up through loop "A" thus forming a new loop. In order to accomplish this, the hook on the latch needle holds the last loop securely while the latch grasps the thread above and pulls it up through the last loop which is on the hook of the needle.

How the Work is Held

In latching a small runner the stocking may be held in the left hand either with the welt lying toward the elbow or in the opposite direction depending upon which thread is broken and the direction of the runner. In either case the defect is held on the index finger of the left hand and kept firmly in place by the thumb and middle finger, being careful that no strain is placed on the fabric at that point.

In latching a long runner, however, the work may be done more quickly and satisfactorily by placing the stocking over a latcher's

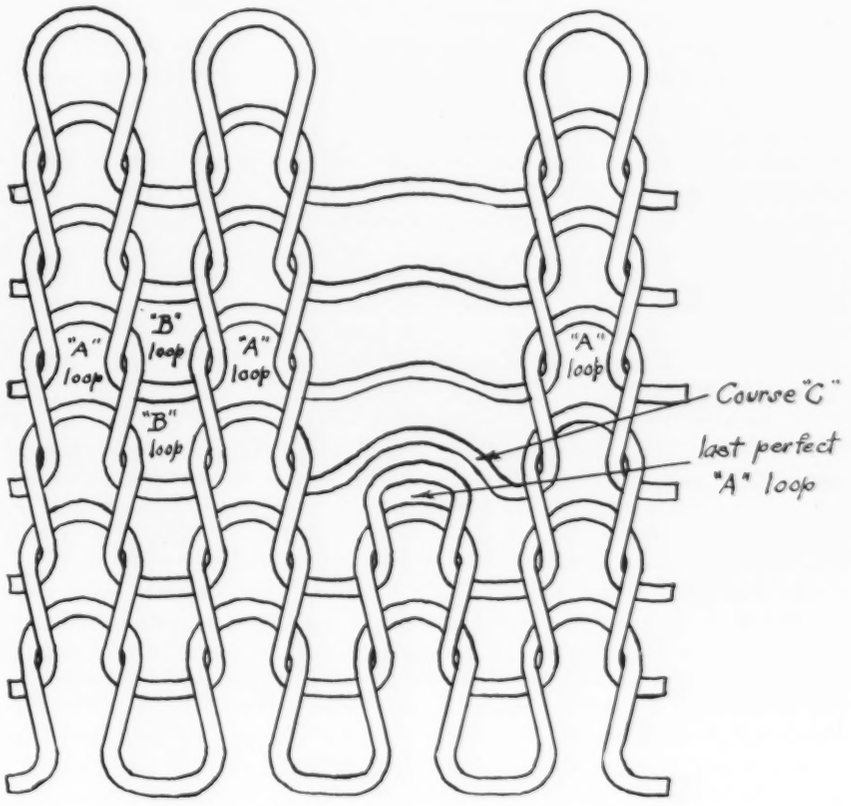


Fig. 1. Detailed sketch of how the runner appears.

cup. This latcher's cup is much the same in appearance as the ordinary egg cup and produces very good results when used in conjunction with many of the patented latch needles in general use.

Basting Around a Cut

Before latching the runners which originate from a cut in the fabric it is necessary to make what is known as a "basting" around the cut provided the work is to be done over the latcher's cup.

In basting around a cut a short fine mending needle is used threaded up with either fine cotton or silk thread. Thread for this purpose may be obtained by unraveling defective stockings which are beyond repair. The work is started at the right side of the cut and is always worked toward the left. The reason for basting is to prevent additional runners from developing in the fabric while the work is being latched.

The basting is done by working a thread around the cut and inserting the needle and thread through every loose stitch or loop in order to hold it securely. If the welt or double portion of the top of the stocking is held toward the person mending the needle loops, or those designated as "A" loops in Fig. 1 will be the ones that are to be held with the thread. If the welt is held away from the operator, then the smaller loops which have been formed by the sinkers or dividers of the knitting machine will be the ones that will be held with the thread. These loops are designated in Fig. 1 as "B" loops.

How the Basting is Done

Starting at the right side and at the bottom of the cut the needle is inserted through a perfect "A" loop. The needle is then inserted consecutively up through one loop and down through the loop adjoining, working toward the left, until the entire upper portion of the cut has been basted. The work is then turned around and the same process completed until the entire cut is surrounded by the thread which holds each vertical row of loops securely. After the basting is completed at least two inches of thread must be allowed to remain at each end in order to prevent the loops from becoming released on account of a short end being pulled back through several loops.

Fig. 2. Latching runner with patented latch needle

This loose end of the basting thread can be used by the latcher to complete her work after the last course is latched up by pulling the loose end through the last loop which has been made by the latcher's needle.

Latching a Single Runner

To latch a single runner the point of the latch needle is inserted down through the fabric four or five loops in a vertical line below the last perfect loop and the fabric then pulled or stretched slightly until the runner continues down to the point where the loop comes to rest on the shank of the latch needle. If the needle is now pulled out of the fabric, it will be found that the hook of the needle is now holding the last perfect loop in the vertical row of loops where the runner occurred. If the needle is now pushed down in the fabric the little latch at the top will be released and as the needle is drawn back up through the fabric will reach over and grasp the next course or thread above, and as the needle is pulled upward the original loop held will slide down over the outside of the hook of the needle and the new loop will be drawn up through this original loop. The operation is then completed in this same manner, being careful to hold the latch needle much the same as in handling a pen or pencil.

The operator must allow her wrists to remain flexible in order that the hand may manipulate the needle up and down through the fabric as rapidly as possible. Each down and up stroke completely forms or re-knits a new loop and this is continued until the entire run is latched.

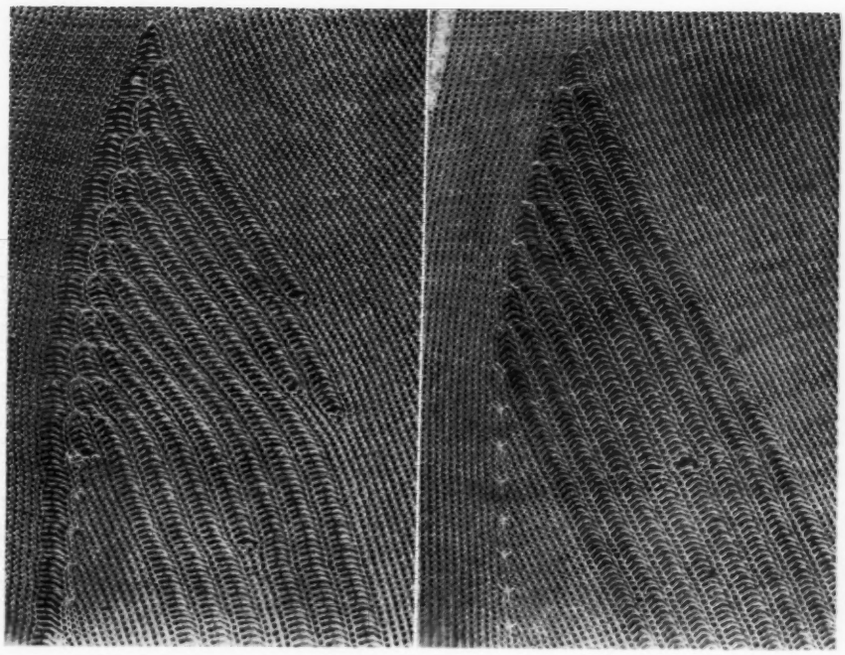
In latching, care must be taken that the point of the hook of the needle does not split the cross-thread when it is being drawn up through the fabric. Another thing to watch for is that only one of these cross-threads is grasped by the hook of the latch needle, or by the latch as it reaches out to grasp the course above.

The manner in which the needle is held is of the utmost importance due to the fact that if it is improperly held a wide row of vertical loops will be formed as the latching progresses. In holding the needle it should point slightly toward the left and should slant in much the same manner as when writing.

After the latch-up has been completed it is necessary to secure the last perfect loop formed before the work is taken to the mender to be finished. This can be done either by pulling the loose end of the basting thread through the last loop as previously described or with the aid of a sewing needle and thread. When the latter method is used a thread is drawn through several loops to the right of the runner and then inserted through the last loop which has been re-knit and finally secured by drawing the thread through several loops in the fabric to the left of the row of loops which has been re-knit.

Latching Runners in the Welt

When a latcher runs past the welt it releases an extra stitch in the back due to the fact that this portion of the stocking consists of double fabric joined at one point, or along a single course. In repairing a defect of this kind the open part of the back of the welt which has been left by the seamer is drawn over the latcher's cup in order to make the defect accessible.



Left, narrowing runners with a main stitch broken. Right, runners originating from narrowing dots

The runner is latched up to the point where the double fabric begins and a pin is dropped down through the last loop which is then carried down through the fabric with the pin still remaining in the stitch. The stocking is then taken off the cup and put back on again in such a manner as to be able to latch up the outside of the welt. This latcher is now latched down to the course where the pin is holding the stitch which was brought through from inside of the welt. We now have one loop on the latch needle and one loop on the pin, and by removing the pin and inserting the latch needle through the loop held by the pin we now have two loops on the latch needle. The latch needle is then inserted down into the runner and we are ready to start latching the remainder of the plain runner or the one which is in the single portion of the fabric.

After this runner is completely latched the work is then ready to be mended. It is well to note that in latching in the welt the procedure is to first latch the runner on the inside of the welt, then the runner on the outside of the welt, and finally the runner in the single fabric.

There are two kinds of defects which occur at the leg narrowings of a stocking. First, where the runners originate at the narrowing dots and extend like tiny branches up the leg of the stocking toward the welt. Second, where the main stitch between the narrowing dots and the seam is destroyed in addition to the runners which extend from the dots as in the previous sentence.

Latching Runners in the Leg Narrowing

In latching a defect of the first type the stocking is pulled over the latcher's cup with the toe of the foot pointing away from the operator and the fabric adjusted over the top of the cup so that the latch needle may be inserted in the last perfect loop of the runner at the extreme right side of the defect.

In a defect of this kind there are likely to be sometimes as many as eight or ten separate runners and if this is the case it is helpful if the operator drops pins down through the last perfect loop where each runner exists in order to prevent them from running any further and thus saving the time necessary to latch them up.

It will also be noticed that in this type of defect there is a row of loops running vertically in the stocking and extending consecutively from one narrowing dot to the other up toward the welt. The remainder of the broken stitches or loops originate when the narrowing dot is released and extend diagonally or at an angle to the back seam of the stocking.

This vertical stitch must be picked up by the hook of the latch needle and the vertical row of loops re-knit up to the point where the knitting machine has dipped over and formed the narrowing dot. At this point the loop is carried on the hook of the latch needle up over this cross stitch to the next course above and the latching continued for about three more courses. At this point a pin is inserted through the last loop which is being held on the hook of the latch needle and secured by fastening it in the fabric.

The latch needle is then removed and is inserted in the last perfect loop of the diagonal runner farthest to the right which originates at the narrowing dot above and away from the operator. The runner is then latched up as described previously until the last course just below the large loop to the right is reached. This loop has just been formed by the operator in latching up over the cross stitch. The hook of the latch needle is now drawn up through this loop thus holding two loops on the hook of the needle at the same time, one being the last perfect loop in the runner and the other being the first loop above in the cross stitch or narrowing dot.

The pin is now removed from the fabric thus releasing the loop which it held which will now run back until it reaches the latch needle. The latching is now completed along the vertical line parallel with the seam of the stocking until the next cross stitch or narrowing dot is reached. The loop is then carried up over this dot by the hook on the latch needle to the course directly above and the operation repeated as previously described.

When the Main Stitch is Broken

When the main stitch between the row of narrowing dots and the seam at the back of the leg is broken it runs down toward the welt and as each narrowing dot is released a diagonal row of loops is released thus forming another runner.

In repairing a defect of this

kind the procedure is to latch up the main stitch or the vertical row of loops up to about four courses above the point where the main stitch and the diagonal stitch are joined together and where the narrowing dot was released. When this point is reached a pin can be inserted through the loop held on the hook of the latch needle and the latch needle then removed from the fabric.

In a defect of this kind where a number of runners occur it is a time-saver for the operator to prevent these runners from going further by inserting pins through the last perfect loop in each runner.

After the latching on the main stitch is accomplished to the point mentioned above the pin is removed from the diagonal runner farthest to the right and the hook of the latch needle inserted in the fabric about five or six loops below the point where the pin was removed. The runner is now latched up to the last course or cross thread which occurs where the diagonal and vertical rows of loops meet at a point. At this point the hook of the needle is drawn up through this last course and the stitch carried over to the right and inserted down into the row of vertical loops in the loop immediately to the right of the point where the diagonal and vertical loops meet.

Latching with the pick-up or hand hook

The pin is now removed from the fabric and the loop which it held will then run back until it reaches the loop held by the latch needle. The main stitch is then latched up to a corresponding point about four courses above the place where the diagonal loop meets the vertical loop and where the narrowing dot previously existed. And so from this point the process or operation is completed in the same manner until all the runners in the stocking have been completely latched and secured. When this is accomplished the stocking is then ready to be taken to the mender.

In using the patented type of latch needle it is well to bear in mind that these needles are quite fragile and the points should never be permitted to be bumped against the edge of the latcher's cup as this is quite likely to injure them in such a manner as to render them practically useless.

Where foot narrowings or gusset narrowings are broken out, practically the same principle is observed as in the example just discussed, and if the above method is closely followed the operator will experience no difficulty in making a repair of this kind.

Latching is an operation which if well done by a skillful operator re-knits the defect in such a manner as to make the stocking as good as new, not only from a standpoint of wear but from a standpoint of appearance as well. Latching properly done will save the firm a tremendous amount of money in reclaiming hosiery that contains runners of various types and kinds.

Synthetics in Textile Finishing

(*Continued from page 56*)

lowed by silk, rayon, and nylon fibers.

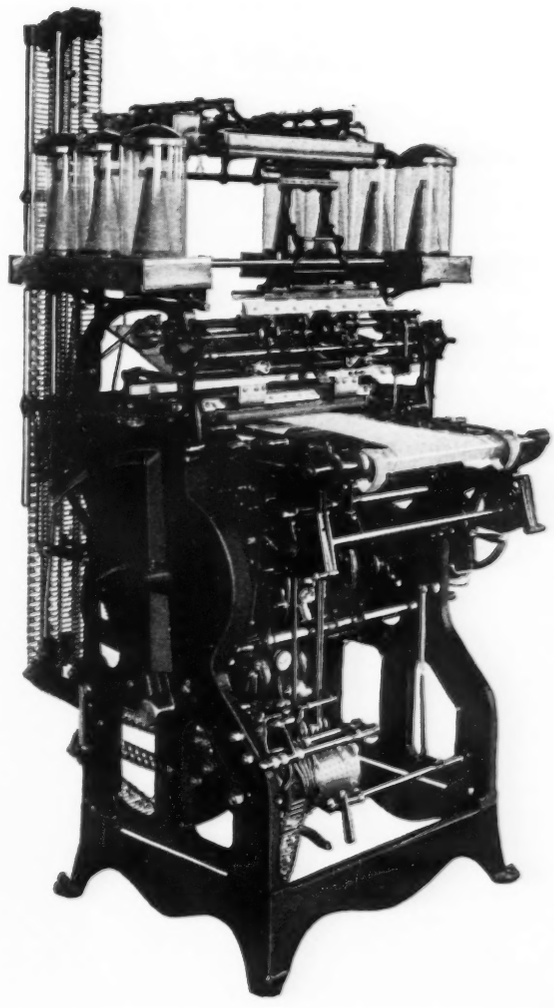
One phase in the finishing of textiles which has not developed to any real degree, involves the use of the sense of smell. As a matter of fact, however, it has been freely predicted by many prominent research experts and scientific authorities that the sense of smell, will, in the near future, come into its own as a source of amusement and enjoyment, and when one stops to think about it, why shouldn't it be so? In textiles, the consumer tries to evaluate merchandise on the basis of utility, and whether he or she likes the looks and the hand of that merchandise. Even though, as is being pointed out here, the finishing operation is tending materially to increase the utility of many textiles, it must be remembered that the dyeing and finishing industries were and still are, based on the latter two of those qualities, appearance and hand. Thus, if those prophecies become realities and odors are deliberately incorporated into textiles for the sake of sales appeal, finishing will become still more important in that it will have this added job to perform. Such an operation will not mean added utility to a product, but it will mean added value if it pleases the consumer. The writer has no intention, incidentally, of trying to produce effeminate desires in men and cause all women to go around in clothes smelling like, "Christmas Night in the Tropics", but there are odors other than sweet flowery ones which, when added to various textile products, would give the wearer and those in his or her immediate vicinity, more enjoyment from them. A common example of this is the odor of real leather, which may actually be a synthetic treated to smell like it.

In this field, we also find anti-odorants—those materials added to a product in order to counteract a disagreeable odor already present. These are finding fairly wide usage, especially where natural latex is used, and in many cases where they counteract disagreeable odors introduced by otherwise desirable finishes, or other processing materials.

In this day of specialization, the textile industry has also been asked to turn out material which, for example, is resistant to acids, alkalies, greases, alcohol, and other common solvents, and these special finishes, although possibly accomplished by one selected product, sometimes require several special treatments in the finishing room.

This article has tried to impress the reader with the growing importance of synthetics in the finishing operation.

HOSIERY GOES "All-American"



Nylon, rayon, cotton . . . American made, American grown . . . will be the basic yarns for the new *All-American* hosiery from now on. Use of these yarns in fine gauges, singly or in combination, entails many new problems for manufacturers . . . problems which will *all* be solved with typical American ingenuity and speed. In fact, *certain* of these production difficulties were licked almost before they were recognized, by the Wildman Single-Head, Single-Unit, Full-Fashioned Hosiery Machine.

This "machine of the hour" . . . handles the finest gauge synthetics and cottons, in any combination, with absolute uniformity . . . it attains *perfect matching* of legs and feet, because the entire stocking is knit in one continuous operation. Complete details will be sent on request. Write, wire or telephone.

WILDMAN MFG. CO., NORRISTOWN, PA.

WILDMAN

SINGLE-HEAD, SINGLE-UNIT, FULL-FASHIONED HOSIERY MACHINE

TRENDS AND HIGHLIGHTS OF THE KNIT GOODS MARKETS

Full-Fashioned Hosiery Trade Makes Notable Progress in Use of Substitute Yarns—Nylon Yarn Output to Be Further Expanded — Fewer Hosiery Shades for Spring — Demands from Armed Forces Expand Greatly—Underwear Trade Active—Certain Dyestuffs and Chemicals Used by Knitters Tight in Deliveries

December 16, 1941

EVEN THOUGH the hosiery industry has been compelled to make the most important changes in its history since the silk freezing order last July, activity has continued without nearly as much interruption as was anticipated and indications are the total for this year will be larger than that covering the preceding twelve months. Sharp cuts will be registered in production of all-silk hose of all kinds but this will be offset by larger output of goods in which cotton and rayon play an important part. Indications are by the latter part of 1942 the raw material problem for full-fashioned knitters will be largely solved when the additional facilities for producing nylon are in operation but most agree that rayon, especially in the hard twist types, has found a place that will continue in certain price brackets of goods. Underwear mills are very busy with indications this will continue next year due to much larger military demands.

Full-Fashioned

Notwithstanding the dislocation of the business through the switch from silk to the use of other fibers shipments of full-fashioned hosiery during the first ten months of this year registered a gain of more than 4 per cent compared with the same months a year previous. But there were distinct changes in the period, emphasis now being on full-fashioned made from nylon, rayon or other fibers more than from silk. The change brought about by the switch from silk to other fibers is apparent in the data for October which show that while shipments of all type women's full-fashioned were dropping almost 18 per cent there was an even sharper decline in shipments of such merchandise made from all-silk which showed a loss in shipments for that month of 66.7 per cent.

In contrast to this, the shipments of full-fashioned made with silk leg with cotton or rayon welt increased that month more than 100 per cent. There has been an improvement in retail demand for such lines in the last ten days but some of the larger distributors here claim that total volume to date has not been as large as they expected and some of this is attributed to the spurt in sales last August. In other quarters there is consumer complaint that prices of nylon full-fashioned merchandise have advanced too far and in spots there is some tendency to work such lines downward in price slightly.

The industry looked with gratification upon the latest announcement by the du Pont Company that it would increase further the production of nylon yarn to a total of 20,000,000 pounds annually instead of the 16,000,000 pounds that the completion at Martinsville was expected to bring. By the latter part of next year indications are fairly definite that nylon almost alone will be able to turn out enough full-fashioned, taking into consideration the longer wearing qualities of the man-made fiber. It is regarded in the trade as a certainty that the market for silk in the United States will never return.

Courtesy, Scholler Bros., Inc.

Half-Hose

This has been an excellent year so far as volume in half-hose has been concerned with a large part of the production going to the armed forces of the country. Data compiled by the National Association of Hosiery Manufacturers confirm this, showing that during the first ten months of this year shipments of half-hose and slacks were 24 per cent larger than in the same 1940 month. But this rate has not quite held up during recent weeks, a report showing that for October such shipments were 15 per cent ahead.

The largest percentage gain was in wool socks indicating that the large commitments of the Army played an important part in this. The Quartermaster Corps, however, has also been a heavy buyer of cotton mercerized socks. Socks are purchased for the Army on the basis of nine pairs for each man with an additional allowance covering heavy types for wear in the colder parts of the country or where we have bases. Total procurements of hosiery for the Army to date are almost 78,000,000 pairs of all types at a cost of more than $15,000,000. This takes in both cotton and wool types.

Active service for the armed forces steps up needs so that indications are in the next months the total production of half-hose taken for the military forces will be much higher under actual war conditions. The only branch of the business to show a shipment drop in the ten months was the full-fashioned where the lack of silk had a noticeable effect. Shipments of the short or slack type socks spurted 32 per cent compared with the first ten months of 1940, indicating this hose is proving more popular each year. Prices are strong due to higher mill costs and labor increases to say nothing of trouble knitters have in getting dyestuffs and chemicals, and manufacturers in some instances say they have not been giving customers all the goods wanted for Spring delivery dates.

Seamless

Production of women's seamless silk lines are showing very sharp reductions compared with previous months and with corresponding months a year

U. S. ARMY PHOTO

THE BATTLE OF PRODUCTION —

GARMENT manufacturers of the United States and Canada share a great responsibility in producing an ever increasing volume, for the armed forces of the Americas.

Our fighting men are entitled to apparel that is strong, durable, warm in winter, cool in summer, and that is thoroughly comfortable for all activities. They are also entitled to garments whose appearance builds morale and stimulates pride.

Many manufacturers are now using the famous Willcox and Gibbs Feldlock Dualfeed and the Automatically Lubricated Feldlock in producing garments to this specification for the Victory Drive.

Willcox and Gibbs engineers have developed straight line production systems, assuring new standards of efficiency, and lowered costs while maintaining the highest quality of production.

Manufacturers can learn how to modernize their present equipment and step up production by utilizing the services of Willcox and Gibbs sewing specialists. Defense comes first for new equipment.

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214 West 39th Street, New York, N. Y.

ago but at the same time shipments of rayon seamless are registering marked increases and offsetting the drop in silk due to the inability of knitters to obtain silk under present conditions. In October shipments of women's seamless silks dropped 64 per cent compared with the same month in the previous year but the same month shipments of seamless rayons spurted about 100 per cent, showing that this branch of the business is taking advantage of the present situation to expand their output of rayon types. A feature of the seamless end of the business continues to be the campus types which in October spurted more than 200 per cent, so far as shipments were concerned, over a year ago.

Underwear

Manufacturers of all types of underwear are rushed and in most instances are sold as far ahead as they will accept business. A feature of the situation over the last month was the advance in the minimum wage rate to 40 cents per hour under the Fair Labor Standards Act which in turn caused a number of manufacturers to make advances in goods of 12½ to 25 cents a dozen. In contrast to this section many took no action, saying their prices had already discounted the upping in the wage minimum.

An important part of the picture in both cotton and part-wool underwear is the large amount bought for the Army and with indications this will be greatly increased during the coming months as much larger armed forces are indicated. To date the Army has bought 94,000,000 undergarments that cost the Government about $46,500,000. Each enlisted man in the Army receives seven units of underwear and eight in the tropics. In part-wool garments a number of mills are working mainly on Army lines. This work gives them priority numbers for their raw materials and chemicals.

Nylon Production Will Be Increased

The duPont Company announced that a further 25 per cent expansion of its nylon yarn capacity to 20,000,000 pounds annually, at normal deniers, had been authorized. The newest expansion will be effected by adding 50 per cent to the present yarn-producing capacity at Seaford, Del., and by rounding out facilities at Bell, W. Va., for the manufacture of nylon intermediates. It was stated that the engineering design work has been largely completed and actual ordering of the materials and installation of new facilities will proceed as rapidly as conditions of procurement will permit. Engineers estimate that the earliest possible date that the facilities would become available for yarn production is the late fall or end of 1942. Since announcement late in 1938 of nylon's discovery by duPont's research chemists, its manufacturing history has been one of unprecedented expansion.

The original plant at Seaford was scheduled to have a capacity of 3,000,000 pounds annually but in less than one year this was increased to an authorized 8,000,000 pounds. A second plant doubling the Seaford output was begun at Martinsville, Va., in October 1940 where preliminary operations were started early in November. This plant is expected to attain capacity production next summer. Pending the time Martinsville begins to deliver at capacity, the industry expects to be getting more and more rayon, the war permitting, for its full-fashioned production and at the same time turning out a large percentage of nylon goods with lisle or rayon tops. Belief in some quarters is that it will not be necessary to turn out 42,000,000 dozen pairs in 1942 as was true in 1940 due to the fact that nylon has greater durability, permitting demands to be satisfied with a smaller total of full-fashioned goods than when silk was the principal fiber.

FORECAST

(Opinion submitted by COTTON's market correspondent)

Philadelphia, December 16, 1941

DECLARATION OF WAR between the United States and Japan, Germany and Italy, while not altogether unexpected, is an event of such great importance that its effects cannot be fully appraised far ahead. But it is a positive certainty that the trend of recent months toward Government control of more lines of endeavor in this country has already, and will continue at an increasing pace, gained momentum. From now on most business firms will be working on Government orders of some type and this affects textiles as much or even more than the average line of manufacture because with the greatly expanded programs for our armed forces there will be almost fantastic increases in the textiles of all types needed and quickly.

Already there have been bottlenecks in certain textiles needed by the armed forces such as combed uniform fabrics, mosquito netting and cotton cloths that are used in making raincoats, to mention only three. So that with an Army about double what we have seen, it would appear that these would become more of a problem, but the chances are the Army will lower its standards so that in many of these carded yarns will be allowed, without doubt, to loosen the delivery problems for the industry. But even so it will mean a much larger percentage of manufacturers in this branch of the industry will in the coming months be working on military orders and included will be enormous amounts of hosiery and underwear. Consumption by the Army is several times as rapid as in civilian life and in addition active warfare means an even faster expenditure rate. Instead of about 15 per cent of cotton production going into military use about 30 per cent will.

Although not used as yet in exceptionally large quantities by the Army or Navy, rayon will play an important part in the war drama and might if imports of wool, from Australia especially, are shut off, be widely used in making clothing both for military and civilians. In the absence of real silk the chances are that parachutes, for example will be made from nylon yarn so that these and many other war uses are going to develop for the man-made fiber. Silk will of course be nonexistent in a few months or after our present small stocks are expended for defense use.

The woolen and worsted branch of the industry will be most sharply affected by the war. A larger Army will mean that about 80 per cent of the production of it will go to the armed forces so that civilians will be hard put to it late in 1942 when they go to replenish in their usual manner. In addition it may be that raw wool imports will not come in at a rate necessary to maintain our 1941 rate of consumption, to say nothing of a higher rate for the new year. Under normal circumstances this larger demand than supply would mean skyrocketing of prices all along the line but Government ceilings on about everything will make this impossible in the new and greater World War.

Fewer Shades Scheduled for Spring Hosiery

The Textile Color Card Association has issued its advance hosiery card for Spring, 1942, portraying four colors adaptable for silk, rayon, nylon, cotton lisle and mercerized cotton hose. The colors are called Blushblond, Sunnitan, Amberspice, and Townmist. In the interest of industrial economy and the national defense effort, it was stated by Margaret Hayden Rorke, managing director, the association has greatly reduced the number of colors usually shown in the Spring hosiery card, nine colors having been issued last year. This reduction in the number of hosiery colors is indicative of the association's general policy from now on of limiting the colors to be shown in all its cards, including the shoe and leather as well as the fabric additions.

Of the four colors chosen, three are in the medium register, namely, Sunnitan, Amberspice, and Townmist, while Blushblond was selected as the

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is the measure of quality in the finished stocking. The quality in detail of Torrington Needles, which are manufactured with automatic precision by unique machine methods, is a subtle but extremely important factor in achieving that uniform knitting which distinguishes the finest stockings produced today.

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With production schedules constantly endangered by non-delivery of essential materials, the elimination of even one such problem is a valuable aid in maintaining maximum output. Torrington Needle Bearings are available for *prompt* shipment on your priority orders!

Right from the start, steadily rising sales curves reflected industry's immediate recognition of the Needle Bearing's advantages. Long before defense requirements brought increasing demands for most industrial materials, The Torrington Company was prompted to expand production capacity again and again, to anticipate growing use of the Needle Bearing. So broad was this expansion program, initiated in the light of the Bearing's demonstrated potentialities in normal times and its acceptance by so many of the country's leading engineers, that it has proved sufficiently flexible to care for the abnormal requirements of the present.

Manufacturers of aircraft, automotive equipment, textile machinery, farm implements, electrical apparatus, and many other products have put the Needle Bearing to work in thousands of applications, because of such conspicuous features as low cost, small size, high capacity, ease of installation, efficient lubrication. And today the Needle Bearing has a new and even more important appeal—its ready availability to the makers of defense equipment and machines.

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lightest shade. These new hosiery colors are distinctly different from each other and have been selected to complement all the important basic color ranges in spring costumes and accessories. Of the four shades offered Blushblond is described as "an alluring skin tone". Sunnitan is a "golden sun tone". Amberspice is called "an exciting burnt shade." Townmist is described as a "smart neutral biege." Many branches of the industry have already adapted themselves to the new conditions which will see manufacturers turning out not only a smaller number of colors but the number of styles in their line will also be curtailed. Because of the tremendous demand for nylons most manufacturers have found it practicable to confine shades in these stockings to a maximum of three or four with no complaint from distributors or consumers. Manufacturers in the past have frequently shown ten or more silk hosiery shades, the Fall 1941 hosiery card containing eight shades and its Spring card nine colors.

Titles to Foreign Silk Passed to Defense Firms

Known titles to practically all unopened bales of raw silk held by hosiery manufacturers and importers under the Government's freezing order of July 26 have passed to parachute makers or the United States Defense Supply Corporation. What remained of the unfrozen silk which was in broken bales or in process at the time of the Government's freezing order is now about exhausted, according to manufacturers so that the hosiery industry is about finished with the fiber that has been its main raw material for many years and is now in production on nylon and other substitute numbers. Retail stocks of silk hosiery have not been cleaned up and indications are these will be adequate for the holiday business and possibly for a few weeks beyond.

Puts Blame for Nylon Advance on Retailers

Notwithstanding charges that hosiery manufacturers have been charging questionable prices on nylon full-fashioned, the National Association of Hosiery Manufacturers stated that only a fraction of the industry has demanded prices on nylon hosiery which can be questioned. The mill group stated it is always the case when supply is being curtailed and demand remains stationary or expands, there is the temptation to raise prices beyond cost and reasonable profit. Unquestionably some manufacturers of hosiery have yielded to this temptation and have quoted prices on nylon hosiery which are explainable only by the current emergency situation. It is admitted that bulk of manufacturers have pursued a responsible attitude on the matter and have raised their prices only to reasonable levels. The comment was made that if the Office of Price Administration places a ceiling on the price of nylon hosiery it will be a case in which the performance of a few results in a regulation which governs all.

Rayon Yarn Resale at Markups Studied

Reports in the trade of resales of rayon yarn at premiums as high as 20 cents a pound above the 4 cent markup approved by the Office of Price Administration brought from Leon Henderson, the head of this Governmental agency, a request that leading yarn jobbers and converters file complete lists with his office and a warning that OPA was prepared to take corrective measures. Although rayon yarn has not been under a formal ceiling, on October 28 Mr. Henderson issued a list of prices his office considers the maximum that should be charged for rayon yarns. This list, which was based on the prices that generally prevailed as of October 5, specifically stated that resale of quality yarns should not be made at more than 4 cents a pound above producer's prices for first quality yarns.

Mr. Henderson listed three types of excessive pricing that has come to his attention: Resales of unconverted yarn at premiums 25 to 27 cents a pound above producer's prices, saying that these premiums were being charged by jobbers and weavers; resales by weavers at excessive prices of yarns acquired through allocation under the OPM silk substitution program, and third, sales by converters at prices based on unwarranted conversion charges far above those generally prevailing to October 5. OPA sources emphasized hosiery manufacturers that find themselves with rayon yarn allocated to them and find that they have yarn which they do not need or cannot use can always go to the original producer and obtain aid in disposing of this merchandise without the cost of going through an intermediary. It was also said some hosiery manufacturers may not realize that when they sign the papers involving the release of rayon yarn to them by the OPM they at the same time sign an agreement that this yarn is for their own use exclusively and will not be resold.

Developments have been perfected in both knitting and seaming equipment that permitted easy change-over to nylon, rayon and cotton in the mills. As a result of the interest in new equipment, Union Special Machine Company, Chicago, has made up a special show model of its hosiery seamer with Lucite base and cover. This permits the spectator to see all of the parts in motion. Lucite's peculiar ability to conduct light around curves results in the unusual illumination shown in the above picture.

Nylon May Be Needed for Army and Navy

Although reports in the hosiery trade are that the Army and Navy have sufficient silk on hand to provide about ten parachutes for every air-man likely to be called into service in the next year, there is a general feeling our Army will be so greatly enlarged that this whole supply picture will be changed. This will mean that the nylon supply might be tapped by the Government before the new year is well under way. One basis for this belief is that the United States will now be obligated to see that all of the Latin American Republics as well as Canada are supplied with war materials which necessarily will include parachutes. Those countries, according to the general understanding, have proportionately less silk on hand than the United States.

National Association of Hosiery Manufacturers reported that as of September 13 there were 27 tons in the Government's stock pile and 6,670 tons on order, the total valued at $40,000,000. The Department of Labor reported there was enough silk in the country to produce 500,000 parachutes. If the Government does take any important portion of the 1942 nylon output then the difficulties of the hosiery industry will be multiplied several times in view of demands that are going to be made for ordinary rayon and for cotton yarns of the type that are usable in the manufacture of hosiery.

New Hosiery Trend Noted in Shipments

Recent trends in shipments of hosiery were accentuated in the October figures, the National Association of Hosiery Manufacturers pointed out, emphasizing in its report that silk con-

tinues to decline in relative importance as rayon, nylon and cotton full-fashioned and seamless ladies hosiery shipments increase. Women's full-fashioned silk hosiery shipments registered a decline in October of 2,363,643 dozen pair from a year ago. Women's seamless silk hosiery shipments were 64.2 per cent less than a year previous, while women's seamless rayon hosiery shipments were 101 per cent higher. October shipments of women's knee length hosiery including campus hose were well ahead of last year. For the first ten months of this year shipments of all types of hosiery gained 14 per cent over the corresponding month of 1940 and during this time shipments of women's full-fashioned gained slightly more than 4 per cent. Women's seamless shipments for this period showed a gain of 7 per cent which was in the rayon, cotton and wool, all silk numbers showing a substantial drop. Shipments of the first ten months showed a notable gain in knee length hose for women. In the half-hose branch of the industry wide gains were registered in the first ten months largely on account of the enormous quantities bought for the Army and the Navy.

Can America Produce Silk?

Very little hope is being held out at the present time that America might be able to replace Japan as a source for raw silk supplies to any sizeable extent. It is stated that the fault is not with the climate but rather with the high cost of production for handling silk worms and for reeling which apparently blocks the development of an American silk industry unless industrial ingenuity comes to the rescue with new methods. The Department of Agriculture reviewed its recent experiences by saying investigations indicated that with reasonable care silkworm cocoons could be produced almost anywhere in the United States and that the mulberry also did well throughout the country. These studies showed that the cost of raising the cocoons and reeling raw silk was entirely too great to compete with imported raw silk coming largely from the Orient. Especially in the matter of reeling raw silk from cocoons the experiments appeared impractical. The principle stumbling block to American silk production would include the large amount of hand labor required in the caring for silkworms as well as expenses in reeling. The greatest Western Hemisphere progress has been made in Brazil where the industry dates back to the early part of the last century. At best however, Brazil plays a very minor roll in world silk production, the 1939 crop amounting to one-tenth of one per cent of Japan's production for the same year.

Additional Wage Negotiations Held in Philadelphia

Following a week of conferences in Philadelphia early in December between representatives of the Full Fashioned Hosiery Manufacturers of American, Inc., and the American Federation of Hosiery Workers, the 1941-1943 National Labor Agreement was clarified. The changes in the pact are to become effective January 12. These concern cotton welts; payment for initial operation of and extended machines and those equipped with backrack attachments for which piece rates have been established; nylon rates; minimum wage, and a number of other matters that were left for clarification after further study following the signing of the agreement last August. The determination of nylon rates was postponed. Another section provided for the following: the 45-gauge, 6 to 9-thread and 4 and 5-thread silk to welt legging rates are to be stricken from the rate schedule for legging machines of 18, 20 and 24 sections. Returns on the membership referendum for approval or disapproval of this agreement are due on January 10. The union's national executive board was unanimous in its support of the changes, believing they would represent an improvement in the National Labor Agreement.

High Twist Rayon Practical for Hosiery

The use of high twisted rayon yarns in hosiery definitely contributes desirable characteristics to the manufacture of a stocking, according to B. L. Hathorne, president of Crepe de Chine, Inc., who said that to contend high twist is harmful to rayon is to ignore the well known fact that millions of pounds of rayon in 100-denier, are twisted 55 to 70 turns per inch and woven into excellent women's dress fabrics. The strength of properly processed high twist rayon hosiery is sufficient to meet the needs of the hosiery industry, he said, insofar as boot yarn is concerned.

Exhaustive wear tests have proven that good quality Ray De Chine hosiery are thoroughly satisfactory from the viewpoints of sheerness, dullness, resilience, touch and durability, it was claimed. The one problem not yet completely overcome, he admitted, is that of the heel and toe construction. To date, it was said, rayon yarns have not proven satisfactory for this purpose. Synthetic resin applications have successfully overcome this problem in the laboratory but these applications have not yet been thoroughly proven in commercial practice. It is for this reason most rayon hosiery is now containing fine cotton yarns in the heel and toe.

Berkshire Commemorates Billionth Stocking

The Governor's mansion in Harrisburg, Pa., was the scene recently of presentation of the billionth stocking made by the Berkshire Knitting Mills, Reading, Pa., to Mrs. Arthur H. James, wife of the Governor of Pennsylvania. It was in 1906 that Berkshire produced its first stocking which was a 33-gauge cotton stocking, mercerized or otherwise treated to produce a shiny effect. By 1915 the 36-gauge, half silk boot was in vogue and a few years later the three-quarter length 39-gauge silk boot became the prevailing style which remained popular for many years although the gauge jumped to 42 in 1922. In 1924 rayon made its appearance and in 1927 a 45-gauge Berkshire stocking with silk leg and welt was featured. The ever insistent demand for shearer stockings resulted in the popularity of two and three-thread 51-gauge stockings. It was also pointed out that in 1940 nylon yarn became available for the manufacture of full-fashioned hosiery.

Rayon Shift from Underwear to Robes

Underwear manufacturers predict that one of their chief problems and also a question confronting wholesale and chain buyers will be to obtain sufficient women's rayon underwear during the first quarter of the new year. This is because so many knitting machines have been transferred to brushed fabrics for the robe market where a better profit margin prevails, so that production of underwear will be drastically curtailed. It is expected that deliveries of women's rayon goods from nearly all mills will be on an allotment basis after the first of the year and indications are that wholesale and chain orders will be reduced by as much as 35 per cent during the next quarter.

Underwear knitters have also been affected and will continue to be by the larger quantity of rayon yarns taken by the hosiery industry. Recently the Underwear Institute exchanged correspondence with the Department of State on Washington's approval of the sale of rayon yarn to Mexico. But to its protest that knitters were suffering from a scarcity of yarn the Institute was informed that the United States under present conditions should make this sacrifice to permit the shipment of a reasonable quantity of rayon to Mexico in return for valuable defense materials which that country is shipping here.

How are you—

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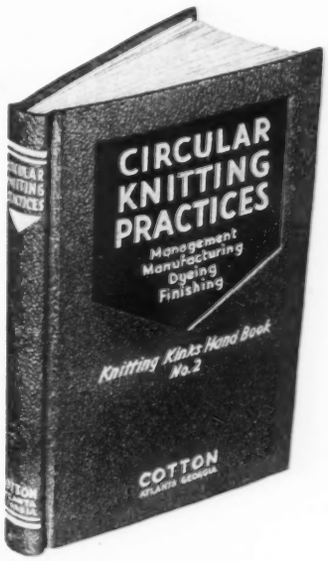
—Boarding Hosiery?
—De-Gumming Silk Hosiery?
—Keeping Hosiery on Size?
—Lubricating Your Machines?
—Preventing Noise in Loopers?
—Gauging Your Worn Selector Fingers?
—Preventing Drop Stitches on Seamers?
—Selecting Colors for Hosiery Dyeing?
—Reducing Imperfects in Knitting Room?
—Routing Goods from Knitter to Dyehouse?
—Preventing Dirty Gores and Black Insteps?
—Attaching Elastic to Three-Quarter Length Hosiery?
—Setting Pattern Mechanism on Spiral Float Machines?
—Preventing Odds Accumulating in Finishing Department?
—Scouring and Dyeing Hosiery in Rayon Cotton Combinations?



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COTTON

Serving the Textile Industries

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Hose Subcommittee Studies Packaging

The problem of reducing packaging requirements of hosiery mills in line with the proposal that all women's hosiery other than nylon be packed in half-dozen pairs instead of the traditional quarter-dozen was discussed at a Washington meeting of the subcommittee of the OPM hosiery industry advisory committee. The subcommittee is composed of Earl Constantine, president of the National Association of Hosiery Manufacturers; Taylor R. Durham, of the Southern Hosiery Manufacturers' Association; G. Allan Dash, Jr., of the Wharton School, University of Pennsylvania; Alfred Hoffman, of the American Federation of Hosiery Workers and George F. Lang, of the Full Fashioned Hosiery Manufacturers of America, Inc.

Underwear Shipments High

Shipment of cotton and wool knit underwear in October, as reported to the Department of Commerce totalled 3,079,965 dozen compared with 2,203,581 dozen in the corresponding month a year previous. Stocks on hand at the end of that month were reduced to 2,655,495 dozen from the 3,102,500 dozen on hand at the close of the same month last year. Orders on hand at the end of that month amounted to 5,792,608 dozen compared with only 3,183,146 dozen a year previous. Shipments of knit circular rayon underwear showing a much smaller percentage increase, totalled 392,429 dozen as compared with 318,720 dozen last year. There were 12,038 machines in operation in the industry compared with 9,906 in the 1940 months.

American Rayon Industry Observes 30th Anniversary

The United States rayon industry is observing this year the thirtieth anniversary of its first full year of production, according to the American Viscose Corporation, which established the industry in this country. Production of rayon yarn in 1911, the year in which rayon manufacture commenced in the United States, amounted to 362,544 pounds and was manufactured entirely at the company's plant at Marcus Hook, Pa., the only American rayon plant at that time. Today the company's seven plants turn out this amount of rayon yarn in less than a day and a half. In the thirty-year period, since the beginning of rayon manufacture in the United States, the annual domestic output of yarn and staple fiber has increased more than a thousand-fold to an annual total of 500,000,000 pounds. Production of the American Viscose Corporation, the largest manufacturer, amounted to 147,000,000 pounds and accounted for 31 per cent of the total domestic output. Production over the coming months is expected to be slightly larger as the company is operating at maximum capacity to supply rayon for hosiery and defense materials in addition to its regular customers.

An Eye on the Knitting Mills

Scott & Williams, Inc., Laconia, N. H., will erect a new $1,200,000 building for stepping up defense production by more than 100 per cent. The company is turning out aircraft superchargers and motor parts for the government. The output of knitting equipment continues to be about 50 per cent of the former capacity. A percentage of current production consists of the new 400-needle single-head machines which are employed by seamless hosiery manufacturers in the knitting of nylons exclusively.

Duplan Corporation is moving machinery to Winston-Salem, N. C., for the purpose of opening a processing unit in that city. The unit will be housed in the Hanes Hosiery Mills plant, where space has been leased. The equipment will be used for the processing of nylon and other yarns for textile manufacturing; the company wil also handle work for other plants.

San-Knit-Ary Textile Mills, Philadelphia, Pa., manufacturers of knit toweling, net bags and other knit goods, have purchased a 2-story building at 5423 Lena St., totaling about 16,000 square feet of floor space, and will occupy for production.

Acme Cotton Products Company, Inc., East Killingly, Conn., manufacturers of knit tubing, cotton specialties, etc., are increasing the size of the plant and are installing additional equipment. Cost is reported to be over $50,000.

Doster Hosiery Company, South Milton, Del., has had underway an expansion program, including the installation of additional knitting machines and auxiliary equipment for another production unit.

It is understood that voters of Grenada, Miss., have approved a $50,000 bond issue for expansion to the Grenada Hosiery Mills. Plans include installation of finishing plant to cost about $125,000.

Swiss Knitting Company, Spruce St., Dover, N. H., manufacturers of knit underwear, sportswear, etc., will build a one-story addition about 75x100 feet, costing over $65,000 with equipment.

Headland (Ala.) Hosiery Mills are adding two 45-gauge, 24-section full-fashioned hosiery machines to the equipment, and another will be added early in 1942.

Womark Knitwear Company, Inc., 39 West 32nd St., New York City, manufacturers of outerwear, have leased space in a building at 149 West 36th St., and will occupy for expansion.

Hega Knitting Mills, Inc., New York City, have been organized with capital of $20,000. The mill will produce outerwear.

Plans are under way to establish a circular knitting mill at Warsaw, N. C., according to the local chamber of commerce.

Jefferson Mills, Inc., Pulaski, Va., has installed new nylon sizing machines and new coning and twisting equipment.

Textile School Graduates Aid in Defense Program

Ten members of the 1941 graduating class of the textile school of North Carolina State College, who held commissions as second lieutenants in the United States Reserve Corps, recently completed a course of training in the Quartermaster School at Philadelphia and have been assigned to new locations, as follows:

Lt. E. W. McLeod of Carthage, to Quartermaster Depot, Atlanta, Georgia; Lt. W. G. Holadia of Roanoke Rapids, to U. S. Air Base, Lubbock, Texas; Lt. T. J. Fowler of Greensboro, to U. S. Air Base, Dothan, Alabama; Lt. G. H. Glass of Greensboro, to U. S. Air Base, Waco, Texas; Lt. J. D. Boger of Concord, Lt. W. A. Thomason of Charlotte, Lt. O. V. Byerly of Lexington, Lt. J. L. Morgan, Jr., of Gibsonville, Lt. J. E. Odegaard of Montclair, N. J., Lt. K. A. Leer of Hagerstown, to Quartermaster Depot, 21st and Johnston Streets, Philadelphia.

J. J. Ormond of Kings Mountain, L. B. Milks of Asheboro, R. B. Kelly of Rockingham, J. C. Ruark of Southport, A. C. King of Littleton, and T. M. Jenkins of Roanoke Rapids have joined the ranks of other Textile School graduates who are serving as fabric inspectors in the Quartermaster Corps.

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TRENDS—YARN MARKETS

Declaration of War Will Bring Further Tightness in Yarn Situation —Rayon and Mercerized Yarn Producers Complain of Lack of Certain Chemicals—Nylon May Be Needed for Defense Materials—Carded Cotton Yarn Delivery Picture Easier

Philadelphia, December 16, 1941

THE DECLARATION OF WAR is expected to result in even greater Government control over textiles than previously and this will mean prices will not be allowed to fluctuate widely. Already this has been done in cotton yarns and indications are that all types will be under such control shortly. War will also bring important changes in demand with civilian production scheduled to diminish as demands of the armed forces increase. This is expected to result in the coming year in a wide gain in the use of wool by the Army and the resultant decline in that obtainable by the civilian trade. If the war prevents large additional imports of Australian wools this will be further intensified and that much less for civilians. One result will be to increase greatly demands for rayon yarns of all types and, if wool becomes scarce, demand for spun rayon for clothing use. Export demands, recently heavy, may have to be curtailed somewhat under war conditions.

Cotton Yarns

Although raw cotton has been stronger over the last month, the declaration of war by this country has not had a drastic effect on the sales cotton yarn market. Demand from the consuming trades has been generally smaller as is normally seen as end-of-the-year inventory-taking approaches and at the same time spinners in many cases have not been willing to offer large quantities. This tendency has become more apparent in the last couple of weeks. The trade realizes that under war conditions important changes in the type of yarns most active will be seen in view of the fact that a much larger percentage of the total sales yarn production will in the coming months go into military rather than into civilian goods. In view of the fact Army specifications, in a majority of cases, call for combed quality rather than carded there has been a tight situation in several lines such as cotton uniform materials.

Because of this situation predictions are being made that with a greatly enlarged Army changes may be made in these specifications which would permit the use of carded quality instead of combed, thereby enabling a larger number of spinners to take part in this type buying. Both carded and combed yarns have continued to operate under Government ceilings, the carded fluctuating in line with changes in the average price of ten southern spot markets while combed peeler yarns remain at least for the present on a fixed price basis which has drawn considerable unfavorable comment from combed spinners in all sections of the industry. Their main complaint is that insufficient margins have existed in a majority of counts which has resulted in many spinners discontinuing the production of such counts.

Under war conditions indications are for more strict Government control and involved in this will be the question of exports which have come into greater prominence since the imposition of ceilings because such prices do not apply to yarns sold abroad. Reports have been that a considerably larger volume of business has been done for export with prices involved greatly above those listed in the domestic ceilings. It is probable this will come in for strict regulation in the near future. Carded spinners in general are satisfied with their ceiling except many declare the margins on the finer counts should be revised in view of the fact there has been a tendency to expand production of coarser counts since the original carded ceiling was set late last May. Mercerizers being extremely well sold ahead have not been offering large new poundage and reports are beginning to be heard that the scarcity of certain chemicals may early next year become an important factor in the processing division of the market.

Silk

Known titles to practically all unopened bales of raw silk held by hosiery manufacturers and importers under the Government's freezing order of July 26 have passed to either the United States Defense Supplies Corporation or to manufacturers of parachutes. Having retained title to a greater part of the frozen silk for three months or more while awaiting the outcome of conferentes of Government officials, the mill men were happy to be relieved of warehousing and other charges by passing it on to the Government's suppliers. What remained of the unfrozen silk, which was in broken bales or in process at time of the Government's freezing order, is now about exhausted. This means that shortly the major full-fashioned hosiery production will consist of nylons with or without rayon or mercerized tops.

Rayon

Further tightening of the rayon yarn supply is considered inevitable under war conditions. This fiber in recent months has been in much larger demand than domestic producers could meet and this condition cannot help becoming worse because there will be a much larger demand from both the military and civilian trades for the man-made fiber as shipping difficulties become more of a factor in other branches of the industry such as in wool imports. Producers believe that an increasing percentage of their output will be needed for linings, cloths for parachutists' uniforms, Navy neckerchiefs, and hat bands, and any other goods required for the armed forces in which rayon could be used to replace silk. With Latin America now cut off from supplies of Japanese raw silk and rayon, as well as from the cheap woven and knitted goods, formerly obtained from the Far East, the industry believes that the Government will speed up its program to supply many of these countries with rayon. It has been reported that domestic producers will be called upon to set aside approximately 3 per cent of their total production for exports of this type.

Despite the need for more rayon products by both the Army and the Navy, the trade is still convinced there will be an adequate supply of rayon for the civilian trade although the products made therefrom may not always be the styles for which consumers have evidenced a preference nor will they be offered in as wide a variety as during peace times. Based on data covering the first eleven months of this year the operating capacity of the filament rayon yarn industry is placed at 450,000,000 pounds annually. By the middle of 1942 an operating capacity of 470,000,000 pounds is anticipated and by March of 1943 this is expected to increase to approximately 475,000,000 pounds.

Worsted Yarns

The Government is about to set ceiling prices on raw wool and it is probable that a considerable portion of the supply will come under its supervision. These steps become necessary under war conditions because of the critical nature of this commodity in regard to its wide use in clothing the armed forces and also because such a large amount of it must be imported. These imports come mainly from Australia, South America and South Africa with a large portion of the finer wool such as used in Army uniforms coming from Australia. In view of war in the Pacific, shipping difficulties may become more and more of a factor in the supply of Australian wools in the United States. Notwithstanding these uncertainties there has been very little excitement in the wool, top or worsted yarn markets since the outbreak of the war, manufacturers asserting that they wish to remain in this position until they learn what the demand is going to be for the armed forces which will be followed by allocations to the civilian trade.

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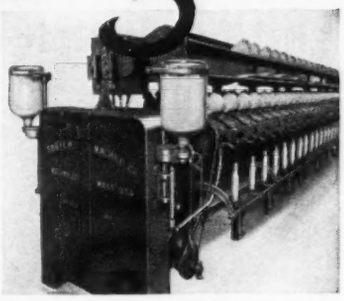

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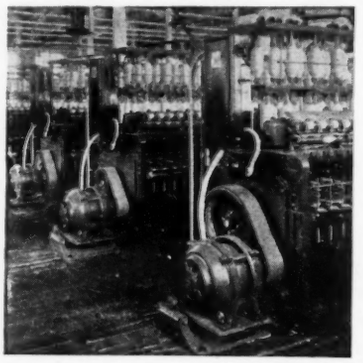
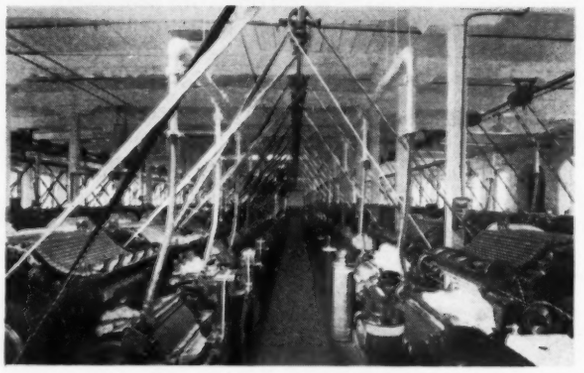


Here's one way to boost the capacity of those you have!



● Survey your drives . . . make sure your production schedule is not being slowed by slipping belts. Where that condition exists, remedy it at once . . . install Rhoads Tannate Watershed Leather Belts.

Tannate's exceptional grip assures maximum power transmission . . . keeps machines running smoothly. You get more uniform work, less spoilage, fewer shutdowns, reduced unit costs.

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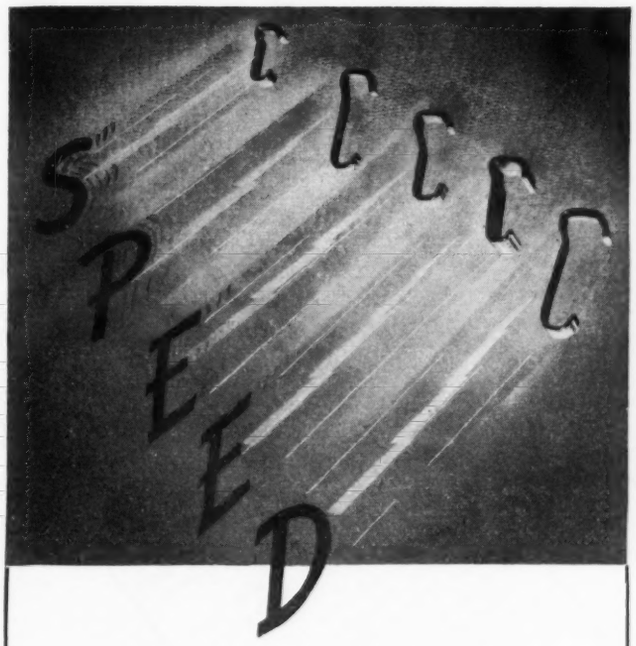
STEP UP PRODUCTION with

RHOADS *Tannate* WATERSHED LEATHER BELTING



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CARTER TRAVELERS are the kind of equipment that meet the extraordinary conditions of today. . . They are precision made. . . They can take it—24 hours a day at highest speeds . . . and Carter quality and service can always be depended upon.

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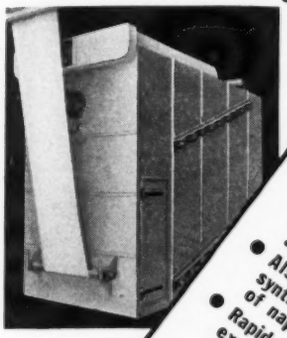

- Replaces drying cylinders or cans in the drying of many types of piece goods.
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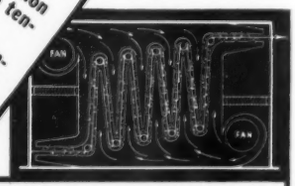

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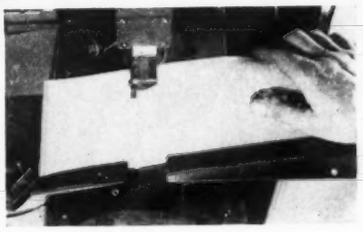

5 Skiving . . . cutting the beveled ends . . . exact accuracy insures that the lap will be of the same thickness as the Apron throughout

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These aprons are made from the finest bark-tanned or chrome leather for long life. They are made on modern, precision-al machines, most of them built according to our own exclusive designs and operated by intelligent, skilled craftsmen.

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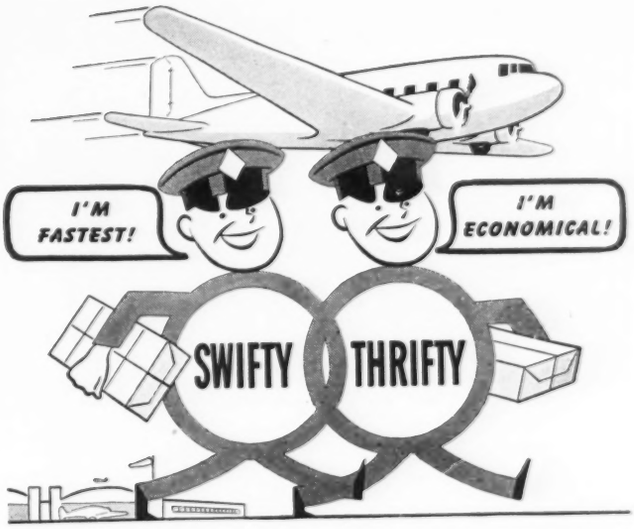

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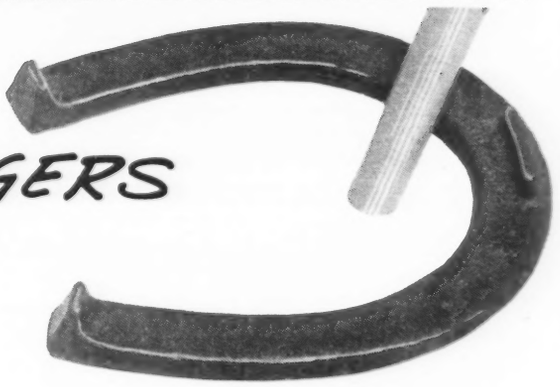
In the Game of Horse Shoes,

YOU PITCH FOR RINGERS

—NOT SINGLE POINTS



And in today's spirited game of production any factor that increases output of your textile machines is a ringer—and counts even more! Henderson's *better than original* replacement parts contribute to stepped-up productivity because machines on which Henderson's parts are used can be run longer and faster. Shut-downs for further repairs are fewer. Efficiency is increased all the way around, and you score points high in productivity.

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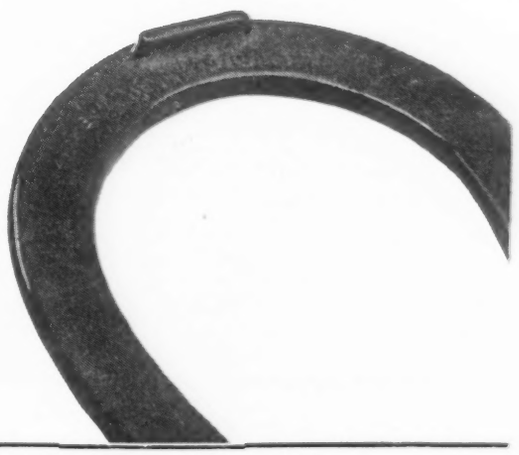

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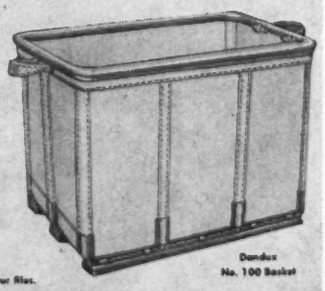

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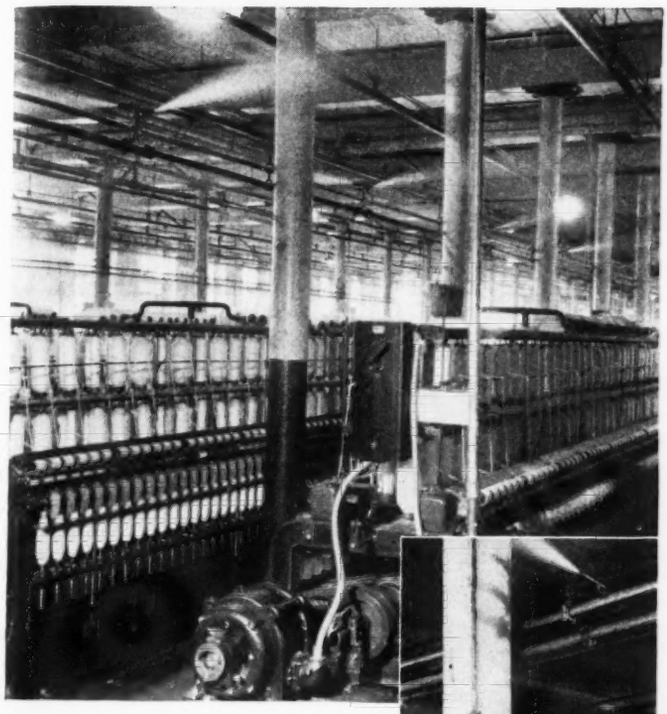

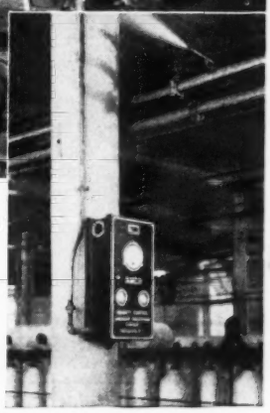

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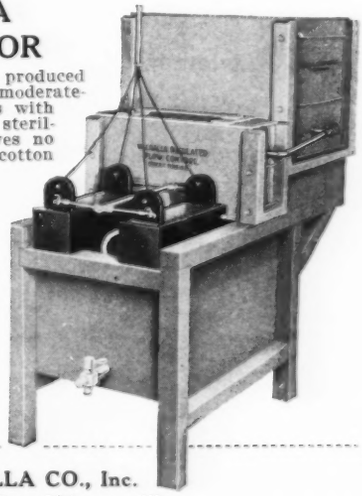

Whether your interest is that of a possible user or distributor, we suggest your sending at once for detailed information.

The Coupon is for Your Convenience

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Our plant has ☐ direct current_____volts.
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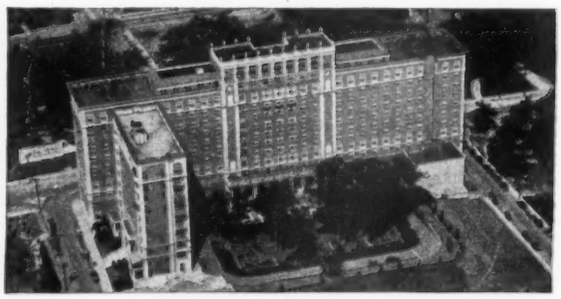

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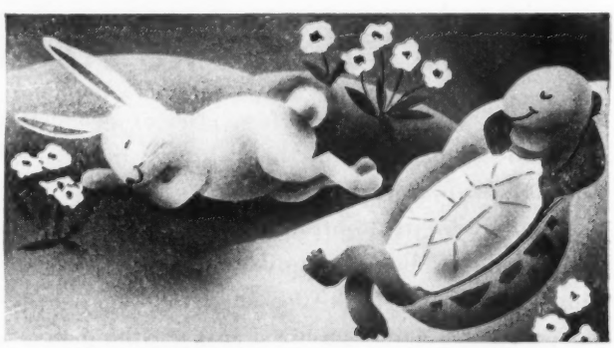

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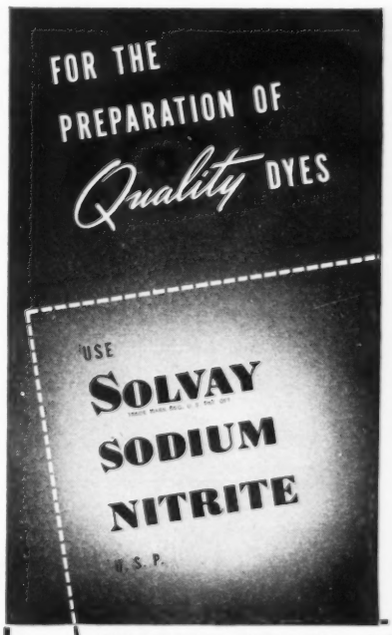

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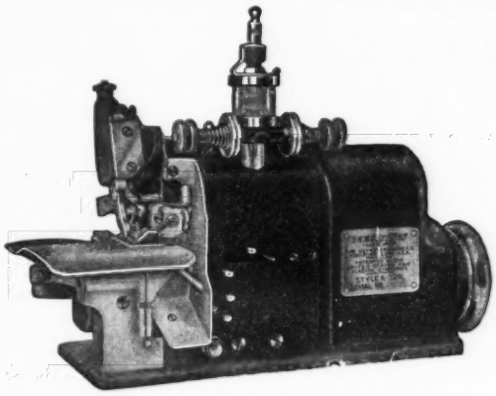

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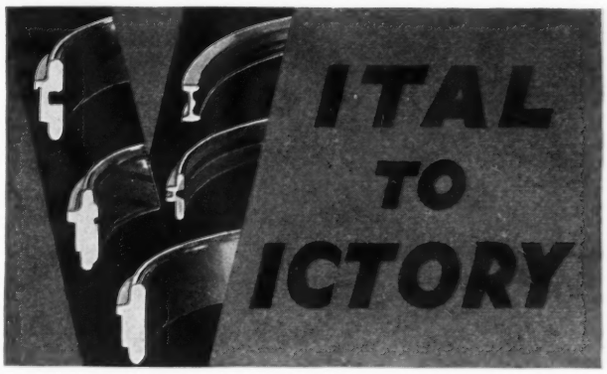

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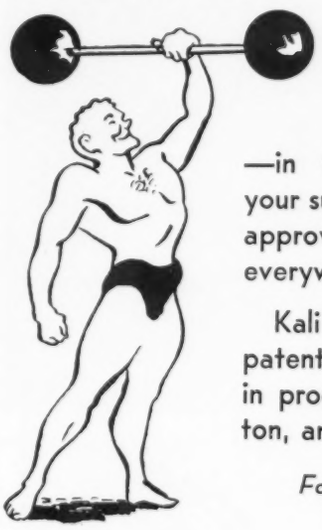

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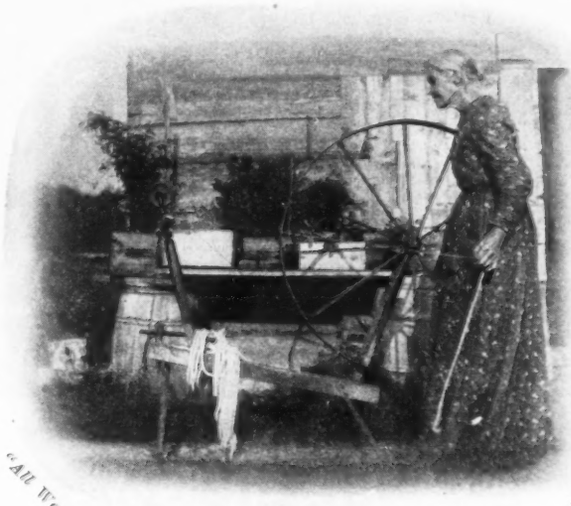

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1088 Ivanhoe Road • • • • Cleveland, Ohio

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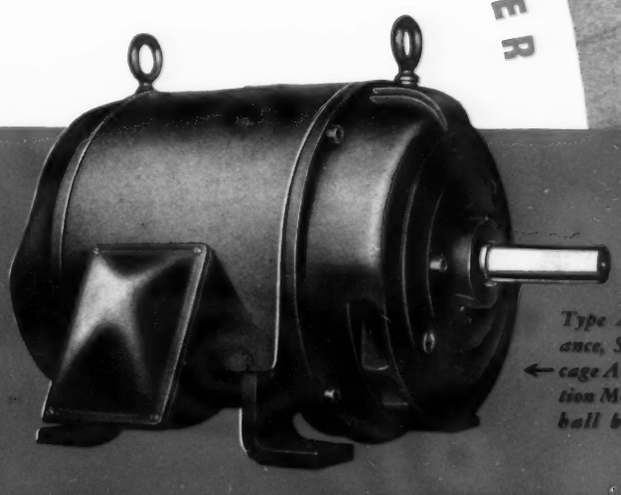

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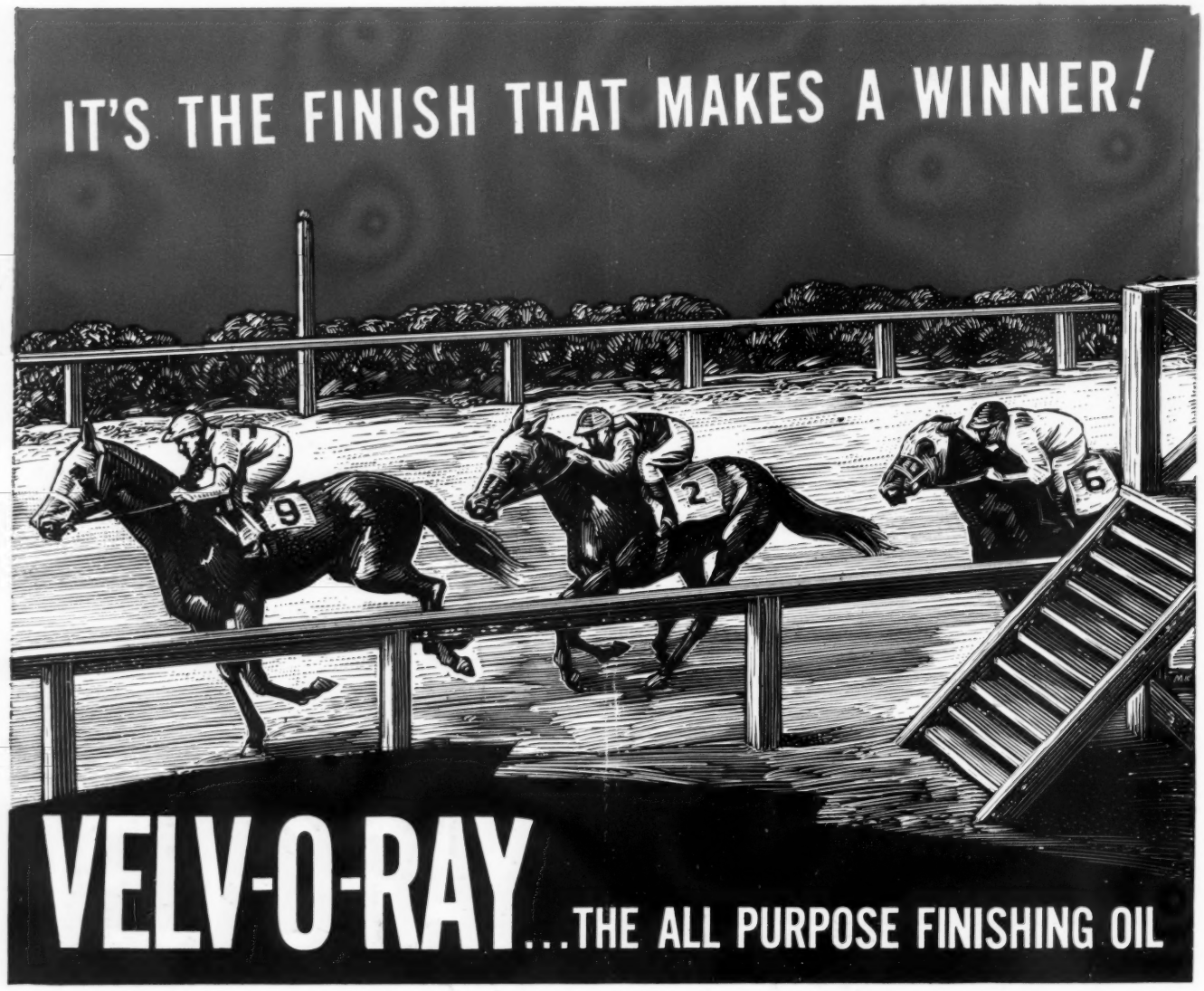

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